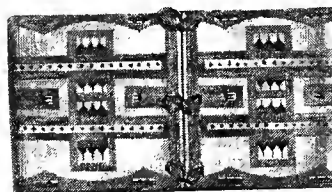




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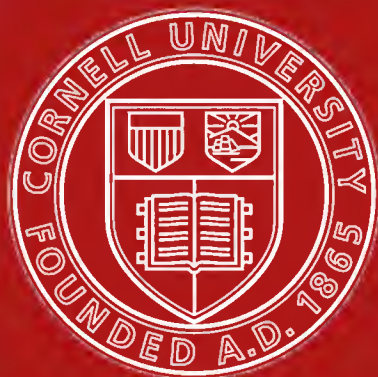


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WRITINGS ON ARCHEOLOGY.

BY CLARENCE B. MOORE.

- Certain Shell Heaps of the St. Johns River, Florida, hitherto unexplored. *The American Naturalist*, Nov., 1892, to Jan., 1894, inclusive. Five papers with illustrations in text, and maps.
- Certain Sand Mounds of the St. Johns River, Florida, Parts I and II. *Journal of the Academy of Natural Sciences of Philadelphia*, Philadelphia, 1894. Vol. X. Quarto, 130 and 123 pages. Frontispieces, maps, plates, illustrations in the text.
- Certain Sand Mounds of Duval County, Florida; Two Mounds on Murphy Island, Florida; Certain Sand Mounds of the Ocklawaha River, Florida. *Journ. Acad. Nat. Sci. of Phila.*, 1895. Vol. X. Quarto, 108 pages. Frontispiece, maps, plates, illustrations in text.
- Additional Mounds of Duval and of Clay Counties, Florida; Mound Investigation on the East Coast of Florida; Certain Florida Coast Mounds north of the St. Johns River. Privately printed, Philadelphia, 1896. Quarto, 30 pages. Map, plates, illustrations in text.
- Certain Aboriginal Mounds of the Georgia Coast. *Journ. Acad. Nat. Sci. of Phila.*, 1897. Vol. XI. Quarto, 144 pages. Frontispiece, map, plates, illustrations in text.
- Certain Aboriginal Mounds of the Coast of South Carolina; Certain Aboriginal Mounds of the Savannah River; Certain Aboriginal Mounds of the Altamaha River; Recent Acquisitions; A Cache of Pendent Ornaments. *Journ. Acad. Nat. Sci. of Phila.*, 1898. Vol. XI. Quarto, 48 pages. Frontispiece, maps, illustrations in text.
- Certain Aboriginal Remains of the Alabama River. *Journ. Acad. Nat. Sci. of Phila.*, 1899. Vol. XI. Quarto, 62 pages. Map, illustrations in text.
- Certain Antiquities of the Florida West-Coast. *Journ. Acad. Nat. Sci. of Phila.*, 1900. Vol. XI. Quarto, 46 pages. Maps, illustrations in text.
- Certain Aboriginal Remains of the Northwest Florida Coast, Part I; Certain Aboriginal Remains of the Tombigbee River. *Journ. Acad. Nat. Sci. of Phila.*, 1901. Vol. XI. Quarto, 100 pages. Maps, illustrations in text.
- Certain Aboriginal Remains of the Northwest Florida Coast, Part II. *Journ. Acad. Nat. Sci. of Phila.*, 1902. Vol. XII. Quarto, 235 pages. Maps, illustrations in text.
- Certain Aboriginal Mounds of the Central Florida West-Coast; Certain Aboriginal Mounds of the Apalachicola River. *Journ. Acad. Nat. Sci. of Phila.*, 1903. Vol. XII. Quarto, 136 pages. Maps, illustrations in text.
- Sheet-copper from the Mounds is not Necessarily of European Origin. *American Anthropologist*, Jan.-March, 1903. Plates in text.
- The So-called "Hoe-shaped Implement." *American Anthropologist*, July-Sept., 1903. Illustrations in text.
- Aboriginal Urn-burial in the United States. *American Anthropologist*, Oct.-Dec., 1904. Plate.
- A Form of Urn-burial on Mobile Bay. *American Anthropologist*, Jan.-March, 1905.
- Certain Aboriginal Remains of the Black Warrior River [Moundville]; Certain Aboriginal Remains of the Lower Tombigbee River; Certain Aboriginal Remains of Mobile Bay and Mississippi Sound; Miscellaneous Investigation in Florida. *Journ. Acad. Nat. Sci. of Phila.*, 1905. Vol. XIII. Quarto, 206 pages. Maps, illustrations in text.
- Moundville Revisited; Crystal River Revisited; Mounds of the Lower Chattahoochee and Lower Flint Rivers; Notes on the Ten Thousand Islands, Florida. *Journ. Acad. Nat. Sci. of Phila.*, 1907. Vol. XIII. Quarto, 144 pages. Maps, illustrations in text.
- Certain Mounds of Arkansas and of Mississippi (including Doctor Hrdlička's paper on the Crania). *Journ. Acad. Nat. Sci. of Phila.*, 1908. Vol. XIII. Quarto, 130 pages. Maps, illustrations in text, eight colored plates.
- Antiquities of the Ouachita Valley. *Journ. Acad. Nat. Sci. of Phila.*, 1909. Vol. XIV. Quarto, 170 pages. Maps, illustrations in text, eight colored plates. (In addition in this number is Doctor Hrdlička's paper on the skeletal remains.)
- Antiquities of the St. Francis, White, and Black Rivers. *Journ. Acad. Nat. Sci. of Phila.*, 1910. Vol. XIV. Quarto, 112 pages. Maps, illustrations in text, twenty colored plates.
- Some Aboriginal Sites on Mississippi River. *Journ. Acad. Nat. Sci. of Phila.*, 1911. Vol. XIV. Quarto, 116 pages. Map, illustrations in text, eight colored plates.
- Some Aboriginal Sites on Red River. *Journ. Acad. Nat. Sci. of Phila.*, 1912. Vol. XIV. Quarto, 163 pages. Map, plans, illustrations in text, eight colored plates.
- Some Aboriginal Sites in Louisiana and in Arkansas. (Atchafalaya River, Lake Larto, Tensas River, Bayou Maçon, Bayou D'Arbonne, in Louisiana; Saline River, in Arkansas.) *Journ. Acad. Nat. Sci. of Phila.*, 1913. Vol. XVI. Quarto, 102 pages. Maps, plans, illustrations in text, two colored plates.
- Aboriginal Sites on Tennessee River. *Journ. Acad. Nat. Sci. of Phila.*, 1915. Vol. XVI. Quarto, 258 pages. Maps, plans, illustrations in text, four colored plates.

ABORIGINAL SITES ON TENNESSEE RIVER

BY

CLARENCE B. MOORE

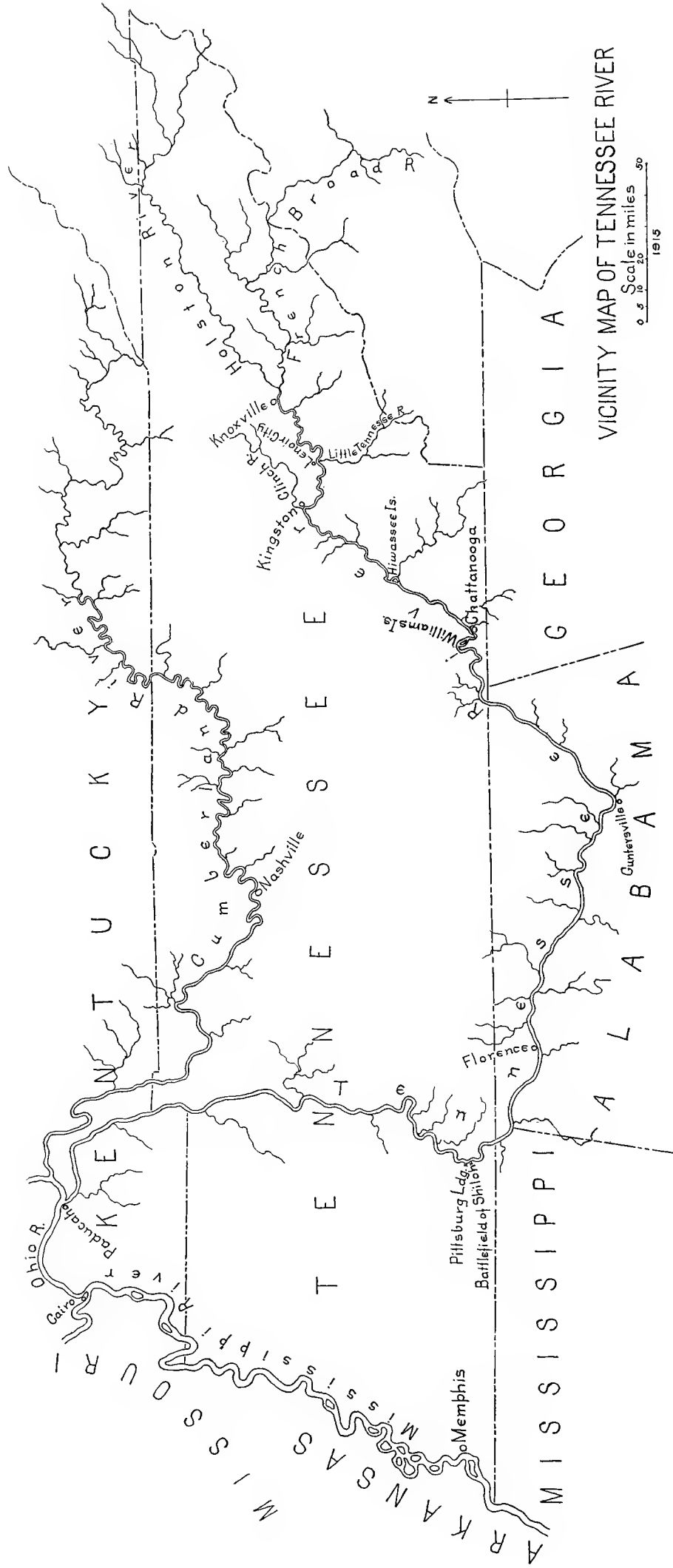
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VICINITY MAP OF TENNESSEE RIVER

ABORIGINAL SITES ON TENNESSEE RIVER.

BY CLARENCE B. MOORE.

INTRODUCTION.

That subdivision of the United States of America known as the State of Tennessee takes its name from that of two or more Cherokee settlements.¹ The meaning of the word (*Tānāsi*) has not been determined.

The archæology of few States of the Union has been more widely described than has that of Tennessee, especially the region having the city of Nashville as a center.

Archæological investigations, mainly in eastern Tennessee, conducted by Rev. E. O. Dunning in behalf of Peabody Museum of Harvard University, are included in the Third (1870) and Fifth (1872) Annual Reports of that institution, with an account of the collection by Jeffries Wyman.

The explorations of Joseph Jones, M.D., mainly in the Cumberland valley, are described by him in "Explorations of the Aboriginal Remains of Tennessee."²

Prof. Frederic Ward Putnam gives an account of his archæological researches in central Tennessee in the Eleventh Annual Report of Peabody Museum of Harvard University, 1878. These explorations were continued under Professor Putnam's direction by Mr. E. Curtis until 1880. Numerous references to this work are given in the Reports of the Museum to 1881.

Archæological work in Tennessee by agents of the Bureau of American Ethnology, mainly along the Little Tennessee, but including a few sites on Tennessee river, is described in the Twelfth Annual Report of the Bureau.

In the Reports of the Smithsonian Institution, *passim*, are to be found accounts of archæological research in Tennessee.

A partial list of Tennessee mounds and sites is given by Cyrus Thomas in his "Catalogue of Prehistoric Works East of the Rocky Mountains,"³ Bureau of American Ethnology, 1891.

Prof. William H. Holmes, in various writings contained in the Annual Reports of the Bureau of American Ethnology, notably in his "Art in Shell of the Ancient Americans,"⁴ and his "Aboriginal Pottery of Eastern United States,"⁵ discusses the aboriginal art of Tennessee.

The late General Gates P. Thruston, in his comprehensive work, "The Anti-

¹ "Handbook of American Indians," Bureau of American Ethnology, Bulletin 30.

² Smithsonian Contributions to Knowledge, Vol. XXII, p. 259, 1876.

³ Bulletin 12.

⁴ Second Annual Report, pp. 179-305.

⁵ Twentieth Annual Report, pp. 1-201.

quities of Tennessee" (second edition, 1897), details in a most interesting way his explorations in the great cemeteries near Nashville, Tenn., and the archæology of the State in general.

Mr. W. E. Myer, of Carthage, Tenn., who has widely explored aboriginal sites along Cumberland river and whose collection is so well known, has written "An Old Shawnee Town on Cumberland River," and "The Caverns and Rock-shelters of Cumberland Valley."

As to the former inhabitants of Tennessee we are told¹ that, in later times, the area occupied by the Cherokee embraced the valley of the Tennessee. Thruston² says that in the historical period the Shawnee once held sway from the Ohio river to the Tennessee, and Doctor Jones³ asserts that the Chaouanons, or Shawnee, inhabited the valleys of Kentucky and Tennessee, more especially the Cumberland, and cites Robertson's statement that the region occupied by the Shawnee was from Tennessee river to north of the Cumberland. The "Handbook of American Indians"⁴ calls the basin of the Cumberland the early home of the Shawnee. Doubtless at one time the Shawnee occupied much⁵ of what is now the State of Tennessee.

However, to adduce evidence that a territory was once peopled by a certain tribe is one thing, but to prove that this tribe constructed the mounds and graves found in that region is quite a different matter. Those who have written on the archæology of Tennessee have, with commendable conservatism, contented themselves with ascribing to the "Stone Grave people" the mounds, graves, and artifacts of that region, that are connected with the use of stone in sepulture, while aboriginal interments not associated with stone, have been, with equally praiseworthy caution, left unassigned to any particular tribe.

The stone grave, the most distinctive feature of the archæology of Tennessee, though found in northern Georgia,⁶ West Virginia,⁷ Kentucky, southwestern Ohio,⁸ eastern Indiana,⁷ southern Illinois, and sparingly in Missouri,⁹ and, as

¹ "Handbook of American Indians," Part 1, p. 616.

² *Op. cit.*, p. 22.

³ *Op. cit.*, pp. 147, 154.

⁴ Part 2, p. 531.

⁵ And probably even to the south of Tennessee. Through the courtesy of Dr. Aleš Hrdlička we give an extract from a letter to him from Dr. John R. Swanton. "'The Indians of Marshall County, Alabama,' by Oliver Day Street of Guntersville, Ala., published in the Transactions of the Alabama Historical Society, Vol. IV, p. 193-210. This writer brings forward historical and traditional information to show that the Shawnee occupied the region of the great bend of the Tennessee in northern Alabama between 1660 and 1721. He even locates 'their principal town' 'near Tennessee river,' etc. Upon the whole there is reason to suppose that during the time when they were settled upon the Cumberland the Shawnee also made settlements on the Tennessee as well, but I do not think their occupancy of that region was of long duration."

⁶ 12th An. Rep. Bur. Am. Ethn., p. 302 *et seq.* C. C. Jones, "Antiquities of the Southern Indians," Chapter X.

⁷ 12th An. Rep. Bur. Am. Ethn., p. 571.

⁸ Gerard Fowke, "Archæological History of Ohio," Chap. XI.

⁹ David I. Bushnell, Jr., "Archæological Investigation in Ste. Geneviève County, Missouri," Proc. U. S. Nat. Mus., Vol. 46, pp. 641-668, 1914. Thruston, *op. cit.*, p. 28, footnote.

we have been the first to show, in northern Alabama, had such extensive use in Tennessee that in the minds of most it is associated chiefly with that State. "It is in Tennessee that this special form of grave seems to have been made with the greatest care and maintained with slight variation in construction. It is here, also, that the largest cemeteries consisting of burials in stone graves are found and that the graves are often made over one another in tiers forming stone grave mounds."¹

Now let us examine the form and contents of the stone graves, as heretofore described.

Putnam² writes:

"One grave which I opened at Zollicoffer Hill [central Tennessee], though only a few inches under the surface, had escaped former disturbance. This grave was formed of six slabs of stone on one side and five on the other, with one slab at the head, and one at the foot; forming a grave five feet eight inches in length, inside measure, and six feet outside; the average width being eighteen and the depth sixteen inches. The side stones were unevenly broken to dimensions of eight to fifteen inches in width, by about twenty inches in depth and two or three inches in thickness. The two stones forming the head and foot of the grave were larger than those on the sides. All these stones extended a few inches below the floor of the grave, which was made by placing thinner and smaller pieces of stone in such a manner as to form a level bottom to this cist.³ Five slabs of stone, larger than those used on the sides, rested on the nearly even edges of the upright stones, and, slightly overlapping, formed the cover or top of the grave.

"Further examination in other localities showed that all the stone graves were made after this plan, the only variation being in the size [and number] of the stone slabs and in the dimensions of the graves. Any rock was used that could be easily detached in slabs of convenient size. That most common to the localities I visited was limestone and sandstone."

Doctor Jones⁴ says:

"The manner of burial seems to have been as follows: An excavation of a size agreeing with that of the body of the dead was made in the ground, and the bottom carefully paved with flat stones. Flat stones or slabs of limestone and slaty sandstone were placed along the sides and at the head and foot of the grave. The body was then placed within this rude coffin, and with it were deposited vases, small ornaments, pearls, beads, bands of wampum, large sea-shells, idols, warlike implements, stone hatchets and chisels, spear-heads, arrow-heads, stone

¹ Note contributed by Professor Putnam, who adds that, so far as he is aware, the building of stone graves in tiers so as to form mounds is confined to central Tennessee, where some of this kind were explored by him, and by Mr. Curtis under Professor Putnam's direction.

² *Op. cit.*, p. 306.

³ In some instances Putnam found that the bottoms of the graves were covered with potsherds, and still others had evidently had the floors covered with bark. Peabody Mus. Reports, Vol. 3, p. 163.

⁴ *Op. cit.*, p. 8.

swords, paint bowls, and even copper ornaments. The top of the grave was then covered with one or more flat stones. The upper slabs covering the graves were generally on a level with the surface of the ground. In some localities, however, and especially in the most carefully constructed burial mounds, the graves were covered with a foot of earth or more. . . .

"In some localities the sides of the tombs stood up above the surface from four to eight inches, as in the case of the stone graves described by Bartram. When a number of coffins were placed together, the side stones of the first frequently constituted the side of the second, and so on. Many of the stone graves are quite small, and capable of containing only the body of a *new-born* infant. These small graves were constructed with great care, and the sides, bottom and top were formed of much thinner and smoother slabs than the graves of the adults. Many of the short, square graves, not more than eighteen inches or two feet in length, contained the bones of adults piled together, the crania being surrounded by or resting upon the arm and leg bones."

Doctor Jones next proceeds to explode the theory advanced by certain writers of the old school who desired to appeal to the sense of wonder (a class not yet extinct), that the small graves contained remains of a pigmy race.¹

Thruston² describes the stone graves of central Tennessee as follows:

"The rude cists or box-shaped coffins are made of thin slabs of stone. Sometimes the stones are broken or cut, or rubbed down, so as to fit evenly and form a well-shaped case, but more frequently they are rudely joined together. Occasionally, they are found in mounds or layers, four or five tiers of graves deep. The graves are usually six or seven feet long, a foot and a half to two feet wide, and eighteen inches deep; but graves of greatly varying sizes and shapes are found intermingled with those of more regular form. The children's graves are proportionately smaller. Frequently the same cist contains two or three skeletons, and is not more than three or four feet long, the bones having been placed in a pile irregularly within it, indicating that they were probably interred long after death, and after some intermediate preparation or ceremonies similar to the burial customs of some of the historic tribes."

The stone graves, unfortunately, are not so rich in artifacts as one might surmise from reading Doctor Jones's account. Professor Putnam in a personal letter writes us: "I think the great center of the stone-grave people was in the Cumberland Valley. There is where I did my work. Even there objects in the graves were not frequent. Certainly not more than one grave in twenty or more had any artifacts and not as many as that had pottery."

Mr. W. E. Myer, of Carthage, Tenn., whose archæological work along Cumberland river has been referred to, writes us: "I have found not more than one grave

¹ Putnam found in some of the cemeteries that the children's graves were separated from the graves of adults, one portion of the cemetery being devoted to the children. It was such grouping of the graves, he believes, that led some of the early writers to think there had been a race of pigmies in Tennessee.

² *Op. cit.*, p. 29.

in fifty contains artifacts." The reader of the description of our work along Tennessee river will note the very meagre returns from the stone graves there.

In southwestern Ohio, also, but few artifacts have been found in stone graves. We are told by Gerard Fowke:¹ "So far as may be judged from personal exploration and from the reports of others who have made investigations, not more than half a dozen graves out of several hundred opened, have yielded specimens of any sort."

Professor Putnam² reports that only eight pipes were found in several thousand stone graves opened in various sections of the stone-grave area in behalf of the Peabody Museum. He points out, however, that one may, at times, in stone graves find objects of surpassing rarity, and describes (in a personal letter) a fine deposit of rare flint implements obtained in central Tennessee,³ by an agent working under his direction for Peabody Museum, hitherto undescribed in print, which much resembles the superb deposit of flints now in possession of the Missouri Historical Society.⁴ This latter deposit, however, which was found in Humphreys County, Tenn., on Duck river, a few miles above Tennessee river, cannot be said absolutely to have come from a stone grave, though it probably was so derived, as set forth in Professor Moorehead's book.

While undoubtedly flints of wonderful form and workmanship have been discovered in Tennessee, it is almost certain that many flints of very unusual shape, some of which have been illustrated in various books, are the handiwork of well-known counterfeiters and fakirs⁵ who reside in the western Kentucky and Tennessee region, and that genuine flints of unusual shapes in the stone-grave territory are not found nearly so often as readers of archæological works might suppose. Mr. Myer has found none on Cumberland river, and our lack of success in the discovery of such flints on the Tennessee lends further evidence as to their scarcity.

We quote by permission an extract from a letter by Mr. Myer:

"I find flint implements the hardest of all to determine counterfeits.

"It is my belief that a great many bogus relics are placed upon the market.

"In my own collection I found that I had many bogus pieces. I obtained them from men whom I had known for many years and had full confidence in. Even when I began to doubt them I felt I was doing them an injustice. I did not believe they knew enough or had the skill to make the flints.

"I was unable to get definite proof, but I became convinced I had been de-

¹ "Archæological History of Ohio," p. 406.

² Peabody Museum, Sixteenth and Seventeenth Annual Reports, p. 165.

³ Exhibited at the Centennial Exposition, Philadelphia, 1876, and casts of which are in the National Museum, at Washington.

⁴ Gerard Fowke, "Prehistoric Objects Classified and Described," Missouri Historical Society, Department of Archæology, Bulletin I. Warren K. Moorehead, "The Stone Age in North America," Vol. I, figs. 161, 162, p. 164 *et seq.* See also Thruston's interesting supplement to Chapter VII, *op cit.*

⁵ The last letter received by us from our good friend, the late Gen. Gates P. Thruston, written shortly before his death, is very specific as to this counterfeiting and faking of flints. The fact, moreover, is well known in archæological circles.

ceived. It was a bitter pill to have to take out of my collection some of my most cherished specimens. I did it and am glad I did. Science wants the truth. The professional relic dealer somehow gets in touch with much doubtful stuff of very rare form."

An interesting feature of the archæology of Tennessee is its pottery, of which but little has been written except of that of the region centering around Nashville, on Cumberland river, where most of the pottery discovered in the State has been found. The earthenware of this region is similar to most of that of the Middle Mississippi region, whose approximate southern boundary seems to be Arkansas river—in all events west of the Mississippi such is the case.

The pottery of the Middle Mississippi region, while extremely interesting, is bizarre rather than artistic. The ware, shell-tempered, is coarse, thick and lacking in surface finish; forms are often asymmetrical; undecorated vessels abound. The interest in this ware lies mainly in its numerous curious effigy vessels, and in its polychrome decoration which, however, is less often met with in Tennessee than it is across the Mississippi.

For delicate pottery of artistic form, with highly polished surface, often bearing gracefully curved, and sometimes intricate, incised or trailed line-decoration, and seldom without ornamentation of some kind, one must, as a rule, seek farther south—in the Lower Mississippi region. A concrete example of this may be seen in Plate VIII of Thruston's work, where, in the upper left-hand corner, a vessel from the Lower Mississippi region is shown, while all the others are from the Middle Mississippi territory.

The pottery of middle Tennessee, while inferior to that of some parts of the Middle Mississippi region (the northern part of Arkansas, for example, with its "tea-pot" vessels, its head-vessels, its exceptional cases of incised decoration) far surpasses such earthenware as has been found along Tennessee river in Tennessee, if we except the rare examples of presumably a local culture near Chattanooga, to be described in this report.

We shall now turn from the archæology of the State of Tennessee in general to consider Tennessee river in connection with our archæological work upon it.

Tennessee river begins in eastern Tennessee, a short distance above the city of Knoxville, and is formed by the junction of French Broad and Holston rivers.¹ Continuing westwardly and southerly, somewhat below the city of Chattanooga, Tenn., it enters the State of Alabama, where it follows first a southwesterly and then a northwesterly course, and, bordering the State of Mississippi for about ten miles on one side, it again enters the State of Tennessee. Turning northward, the river flows first through Tennessee and then through Kentucky to its union

¹ In former times Tennessee river was regarded as beginning at Kingston, by the junction of the Clinch and Holston rivers. In the report of Col. S. H. Long, made in 1830. Tennessee river is regarded as beginning at the union of the Holston and the Little Tennessee. At present Tennessee river is considered as stated in the text. All this information we have from Major H. Burgess, Corps of Engineers, U. S. A., now stationed at Nashville, Tenn., who in so many ways has aided our expedition.

with Ohio river, at Paducah, Ky., a distance of 652 measured miles, following the course of the stream.

Tennessee river, which flows through rock and gravel, has not constantly changed its course as have some other southern rivers which pass through alluvial deposit.

Though showing ample evidence of aboriginal occupancy along its entire course, the Tennessee possesses but few aboriginal sites of importance. Its greatest mound (at Florence, Ala.), quadrangular, with flat top, doubtless domiciliary, is 42 feet in height. No other mound on the river approaches it in altitude. The principal,¹ and really only notable group of mounds on Tennessee river, is on the Battlefield of Shiloh, near Pittsburg Landing, Tenn., where seven interesting mounds, most of them quadrangular and probably domiciliary, testify to the former presence of an aboriginal town. The highest of these is about 15 feet, though in a description of the group which has been published, the height of this mound, by including part of the river bank, is made considerably greater.

Beginning at Hiwassee Island in eastern Tennessee, and continuing up the river to Lenoir City, a distance of 101 miles by water, in almost continuous sequence are groups of mounds, blunt cones in shape, few more than 10 or 11 feet in height and most much less than that. These mounds, erected for burial purposes, in all probability, contain, so far as is known, but few artifacts in connection with the burials, which are but sparsely encountered in them. They have been largely dug into in a limited way, by people having an exaggerated idea of the value of Indian objects, fostered by the presence of traders who themselves, or through agents, almost patrol the river.² Had anything of any consequence been found in all this digging in these mounds, it is certain that they all would have been torn to pieces long ago, since Tennessee river is thickly populated throughout its length and scarcely a mound on it is out of sight of some habitation.

No aboriginal cemeteries of any considerable size border the river, and sites marked by the presence of stone graves are comparatively few and of very limited extent. Although common report along the river tells of the great flood of 1867 (and of succeeding though less important ones), and describes the fields after its subsidence as showing slabs of stone, human bones, and artifacts, and although one hears of small groups of stone graves that have been plowed away within the memory of present inhabitants, it is unlikely the Tennessee valley, at best but the border of the stone-grave people, ever contained anything like the number of stone graves formerly found in central Tennessee. Had Tennessee river ever possessed stone-grave cemeteries similar in extent to those found farther north, they would have been noted and searched long prior to the great

¹ The group of mounds at Savannah, Tenn., described in the Smithsonian Report for 1870, p. 408 *et seq.*, has been largely dug away, now being within the limits of the town.

² Part way up the river, we were immediately preceded by a dealer; nearly from Chattanooga on our downward journey, a trader went ahead of us in a motor boat, seeking to buy Indian relics and posting notices as to their purchase. Other traders were encountered *passim*.

flood, as was the case in central Tennessee, whose antiquities have been described for nearly a century.

Herewith we present a map of Tennessee river showing the location of stone graves along its course, based on our own observation with one exception which carries the presence of the stone grave somewhat farther east than we found it.

The reader will note that the stone graves, that is to say burials made in connection with slabs or masses of stone, have, for convenience, been divided on the map into three classes: (*a*) the regular, enclosed burial or box-grave found most extensively and constantly in middle Tennessee; (*b*) the burial made on or under slabs or masses of stone but otherwise unenclosed; and (*c*) unusual forms.

It will be noted that, as one might expect, in the northwestern area of Tennessee river the box-grave predominates. Box-graves, however, as will be seen, were found by us to a limited extent in eastern Tennessee, and even, in an isolated case, on the most southerly part of Tennessee river, in Alabama, from which State no stone graves of any kind had been reported before, though their presence there had been conjectured by Cyrus Thomas.

Stone graves of other forms, also, were present along parts of Tennessee river in Alabama, and probably in a scattering way are, or were, along all the stream there.

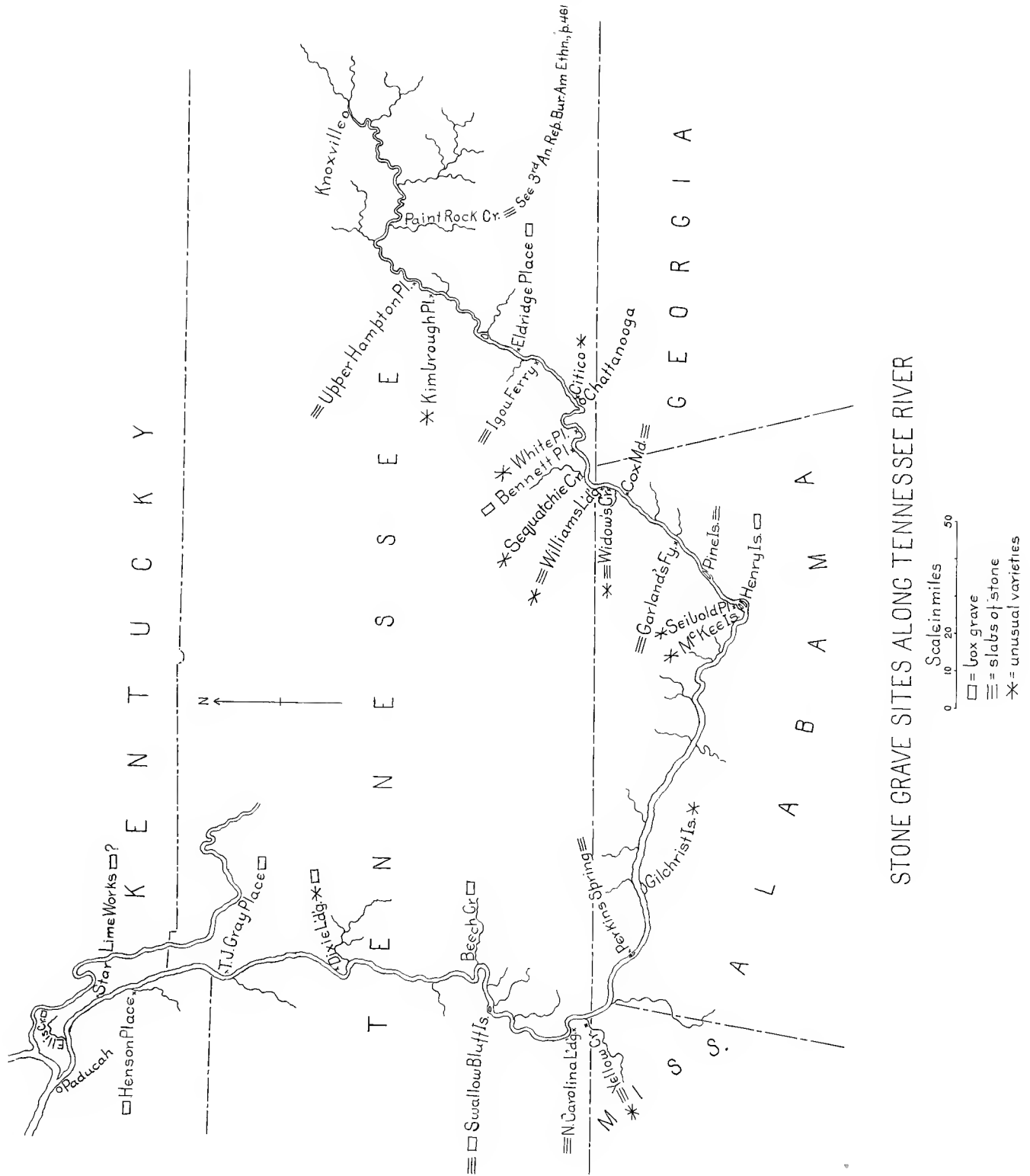
We may repeat that artifacts in the stone graves along Tennessee river, as the reader will see, are seldom encountered, and though objects of great interest have been found in stone graves elsewhere, the statement that these depositories of the dead anywhere are rich in aboriginal remains comes from those who have never investigated stone graves and who apparently write in ignorance of the facts.

Stone graves in any part of the country, it may be said, resemble a lottery: one hears of the isolated winners but not of the legions who drew blanks—and this applies in the main to aboriginal mounds, cemeteries, and burials of every kind throughout the country.

Often with stone graves, unenclosed burials were found by us along Tennessee river, though Professor Putnam informs us that in his investigations in central Tennessee, near Nashville, almost no unenclosed interments were found associated with stone-grave burials, either by himself or by Mr. Curtis who continued Professor Putnam's work there.

Along Tennessee river, as the reader will see, many stone graves, as stated, were not of the box-grave variety which in central Tennessee is almost exclusively found; and along all parts of Tennessee river many mounds and sites containing burials are without stone graves of any kind.

Comparatively little investigation of a serious character had been attempted along Tennessee river prior to the commencement of our own work. Here and there a mound or a group of mounds had been examined, but no systematic work on the stream had been done.



STONE GRAVE SITES ALONG TENNESSEE RIVER

In the Twelfth Annual Report of the Bureau of American Ethnology are accounts of the exploration of a few sites along Tennessee river in Tennessee and in Alabama.

In the Smithsonian Reports are accounts of (a) the exploration of the mounds near Citico creek,¹ Hamilton Co., in the outskirts of Chattanooga (1867, p. 401 *et seq.*); (b) the group of mounds at Savannah, Tenn., already noted (1870, p. 408 *et seq.*), and (c) the mounds on the Williams Farm, Hardin Co. (p. 416 *et seq.*).

In Catalogue of Prehistoric Works East of the Rocky Mountains, by Cyrus Thomas, are noted a number of mounds along Tennessee river, most of which have been referred to by authorities already cited. The exact location of some of these mounds is at present hard to determine, owing to change of ownership, a difficulty not easily overcome, however, in the case of mounds of moderate size not on some island or near a town or the union of streams.

General Thruston (*op. cit.*) speaks of the mounds at Savannah (p. 43), and refers to a group near Johnsonville, Tenn. (p. 46), which probably are the mounds at Dixie Landing, Humphreys Co., described by us. There are also references to various aboriginal artifacts found along Tennessee river, including two stone pipes, one from near Kingston, Tenn. (Fig. 85), the other from near Chattanooga (Fig. 101).

Practically no description of the archæology of northern Alabama, which includes part of Tennessee river, has been published hitherto.

For a description of Ohio stone graves not of the box-grave variety but of irregular forms (and it is irregular forms one finds as a rule in northern Alabama and in eastern Tennessee, as we know), consult Gerard Fowke, "Archæological History of Ohio," Chapter XI.

Tennessee river (as before stated, 652 miles in length) was investigated by us, practically through all of January, February, March, April, and November, 1914, and January, February, March, and April, 1915, the stream having been thrice gone over in the interest of our investigation: once, as we shall detail, by our agents, and twice by our expedition—the journey up and the journey down.

The whole river was carefully searched in advance of our coming by Mr. J. S. Raybon (who later commanded the steamboat during the period of our archæological work on Tennessee river) and a companion, in the summer of 1913, and by them the exact situation of mounds and dwelling-sites was determined, with the names and addresses of their owners, to whom requests for permission to investigate were sent by us.

In former years, as a rule, permission has been readily obtained, but while many owners along Tennessee river sent affirmative replies, some refused, while a fair proportion failed to respond, even though addressed a second time. Such of these as were called upon by us and found at home (absentees were numerous and some lived beyond our reach) usually gave consent.

¹ Another Citico creek, which empties into Little Tennessee river and has a mound near it, is described in the Twelfth Annual Report of the Bureau of American Ethnology.

A few refusals were based on the fact that former diggers (doubtless treasure-seekers, traders, or irresponsible natives) had not conformed to their agreements, but had decamped, leaving excavations unfilled and fields in disorder, behavior for which we (and one could not otherwise expect) had to suffer.

We believe the refusal of some of the owners to permit us to dig was not based on the firm belief in the presence of buried treasure in the mounds and sites, which prevails all over the South (and probably everywhere else where aboriginal remains exist), but on an exaggerated idea of the value of Indian objects. Our offer to hand over to owners all treasure unearthed by us on their properties has elsewhere been to some extent an inducement¹ to grant permission to explore, and doubtless had similar influence on Tennessee river, since most of them thus were having done gratis by others what for years they had been thinking of doing themselves at considerable cost.

Seldom has faith been more misplaced than is that of the class of owners in question in the value of the contents of their mounds and sites. The presence of traders in Indian artifacts along the river and the receipt of circulars from traders in large cities is likely, of course, to foster an exaggerated belief in the value of aboriginal relics. In point of fact, however, dealers on Tennessee river seldom obtain anything other than surface finds, "Injun spikes," "are-heads" (arrowheads), and celts, in addition to what some of them at least are seeking, namely, broken masses of flint, rejects and fragmentary points, from all of which counterfeits of Indian relics and freaks of the fakirs' fancy can be manufactured.

These owners are still further influenced by the exaggerated tales current among the inhabitants along the river as to the prices obtained for Indian relics. One person recounted in all seriousness to us how a man having dug in a site (where we found nothing of any consequence) had obtained curiosities which he had sold for an immense sum. The fact that this individual had died poor shortly afterward did not seem to shake the person's belief in his story.

Although in the case of Tennessee river it has been our intention to enumerate all sites² and mounds (of course, investigating them when possible), it is highly probable, owing to the great number along the stream, that many escaped the search of our agents, supplemented later by our own.

The names of owners of all mounds, whether permission to investigate has been accorded or not, have been introduced into this report more clearly to establish the identity of the mounds and also for the reason that a forthcoming publication by the Bureau of American Ethnology, which will draw to a considerable extent upon our work, will, when possible, include the names of owners. When, in our report, the withholding of permission to dig has been noted, this

¹ Some owners, of course, permit investigation through interest in science and with no belief in buried treasure.

² Some small dwelling-sites, evident through superficial debris, when investigated and found probably to be without burials, have not been noted.

has been done by us to explain the absence of investigation on our part and for no other purpose.

Although in our "Certain Aboriginal Mounds of the Georgia Coast"¹ we have discussed various forms of aboriginal burial, it may afford information to some to have the matter presented again.

The extended burial, as its name implies, is at full length, usually on the back, very exceptionally face down.

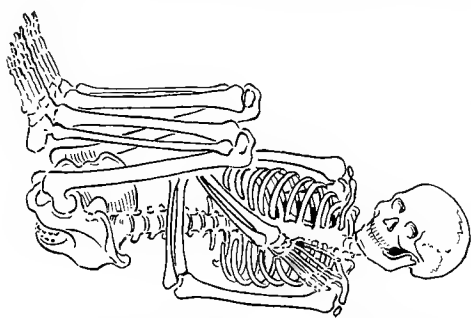


FIG. 1.—A skeleton closely flexed to the right. The trunk and extremities are in the same plane.

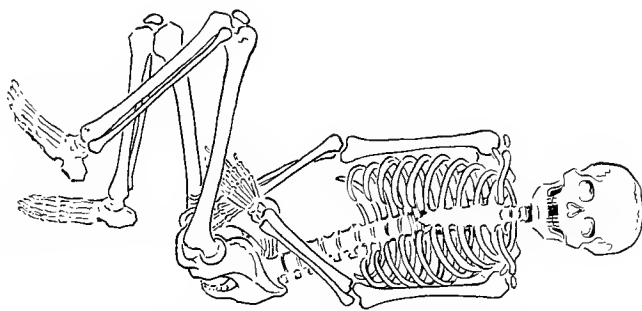


FIG. 2.—A skeleton partly flexed to the right. The trunk and extremities are in the same plane.

The skeleton closely flexed *to* the right or the left, lies with the upper part of the trunk on the back, the lower extremities drawn up close to the body, the legs back against the thighs, these extremities directed to the right or the left, as the case may be, as shown in Fig. 1, in which a burial closely flexed *to* the right is represented.

The burial partly flexed *to* the right or the left is similar to the closely-flexed burial just described, with the exception that the thighs are less closely flexed and the legs are not drawn up immediately against the thighs. A burial partly flexed *to* the right is shown in Fig. 2.

A skeleton closely flexed *on* the right or left lies with the trunk on the side, the extremities closely flexed against the body, to the right or the left, as shown in Fig. 3, in which a burial closely flexed *on* the right is represented.

A burial partly flexed *on* the right or the left has the trunk on the side, the thighs less closely flexed against the trunk, the legs separated from the thighs to a lesser or greater extent, as may be seen in Fig. 4, which illustrates a skeleton partly flexed *on* the right.

The reader will note that the expression right or left applies to the skeleton and not to the right hand or to the left hand of the observer who is facing it.

The bunched burial sometimes consists of loosely piled bones with no attempt at arrangement, and sometimes of masses of long-bones lying parallel, with skulls placed on top or at the side. A good example of the latter kind is shown in our "Certain Mounds of Arkansas and of Mississippi,"² Fig. 1.

¹ Journ. Acad. Nat. Sci. Phila., Vol. XI, p. 6 *et seq.*

² Journ. Acad. Nat. Sci. Phila., Vol. XIII.

The burial in a sitting position, so often reported by novices, is very rarely¹ encountered, if we may judge from many hundreds of burials noted in our experience, provided the idea intended to be conveyed is that of a skeleton placed in a sitting posture, upright, in the ground.

If the skeleton in question lies in the position of one seated, who has been pushed over on the side, then it is simply a flexed burial and nothing else, for when one is in a sitting position the trunk is vertical.

Human remains in the mounds and sites along Tennessee river are, as a general rule, much decayed and consequently very fragmentary, sometimes being indicated only by merest traces. Wishing to avoid repetition of details, we have not in each instance described in this report the condition of the remains encountered, but where they have been in a fair state of preservation, the fact

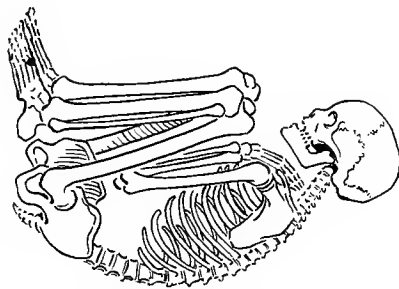


FIG. 3.—A skeleton closely flexed on the right. The trunk and extremities are in the same plane.

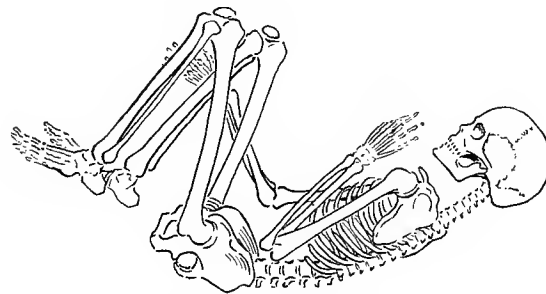


FIG. 4.—A skeleton partly flexed on the right. The trunk and extremities are in the same plane.

usually has been noted. When the burial is discovered, the depth from the surface is recorded, and, as given, is to the upper surface of the bones. Consequently as the remains usually are crushed, five or six inches added to the given depth would represent the maximum depth of the burial. All skeletons, when enough remains were found to permit determination, when not otherwise described, were of adults.

Thirty skulls, in a condition to preserve, with some other bones, were found by us and sent as a gift to the United States National Museum, where they have been received (accession 58353) and examined by Dr. Aleš Hrdlička, curator of the Division of Physical Anthropology in that institution.

Doctor Hrdlička has determined that the crania obtained by us at Leadbetter and Prevatt's Landings, two neighboring sites in western Tennessee, are of the Algonquin type and differ from others found in our search along Tennessee river.

It has been considered best that no paper on the crania found by us on Tennessee river be prepared by Doctor Hrdlička in connection with this report, it

¹ We are told by a prominent investigator that in all his experience he has never encountered bodies buried in a sitting or squatting or crouching position.—Gerard Fowke, "Antiquities of Central, and Southeastern Missouri," p. 2, Bulletin 37, Bureau of American Ethnology. Burials of this variety, though most exceptional, have been found by Professor Putnam; and by us, as readers of our account of the Hampton Place, Hamilton County, Tenn., may see.

being regarded advisable to await results from our future work in regions bordering the scene of our latest investigation that a wider field for comparison may be available.

All pathological specimens obtained by us along Tennessee river have been given to the Army Medical Museum, Washington, D. C.

Dr. M. G. Miller accompanied the expedition, as anatomist, throughout the investigation of Tennessee river, as has been the case during all our archæological work in the South, and has assisted in putting this report through the press.

Mr. S. G. Weir, with us for the fourth and fifth seasons as assistant, lent efficient aid in many ways.

The thanks of the Academy are tendered Major H. Burgess, Corps of Engineers, U. S. A., stationed at Nashville, Tenn., for much valuable information and for lists of mounds and sites, obtained by him from officials under his direction and covering the entire river; to Prof. Frederic W. Putnam for careful revision of this introduction and for many valuable suggestions; to Prof. F. A. Lucas of the American Museum of Natural History, New York, and to Dr. G. S. Miller, Jr., of the United States National Museum, for determination of the bones of lower animals; to Dr. H. A. Pilsbry and Mr. E. G. Vanatta for identification of shells; to Mr. F. J. Keeley¹ for determination of minerals and rocks; to Dr. H. F. Keller for chemical tests; to Mr. Charles C. Willoughby for much valuable assistance; to Miss H. N. Wardle for aid with the index; to Mr. F. W. Hodge for literary revision of the report.

The Academy also warmly thanks the owners of mounds and aboriginal dwelling-sites, who so kindly placed them at its disposal for investigation, and assures them that their courtesy is most fully appreciated.

All mounds and dwelling-sites are described in order ascending the river, though the investigation, while usually, was not always, made in this way.

Measurements in this report are approximate; reductions are linear.

The conchshell so often referred to in connection with aboriginal handiwork, formerly called *Fulgur* by conchologists and by us in all our writings, is now known as *Busycon* and is so referred to in this report.

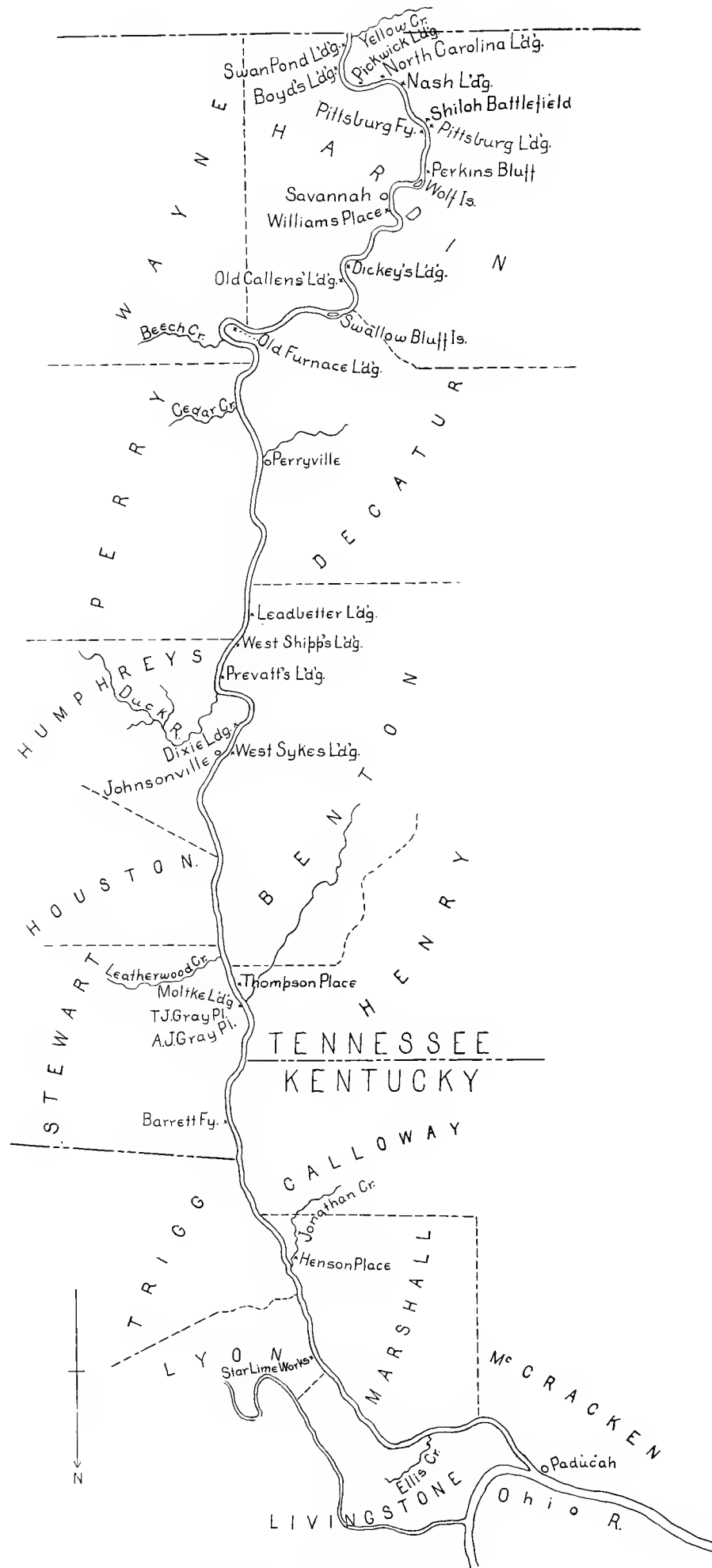
¹ Slides for microscopic examination, for obvious reasons could not be furnished Mr. Keeley, hence exact determination cannot be guaranteed in all cases, as otherwise could have been done.

PART I.

TENNESSEE RIVER IN KENTUCKY AND IN WESTERN TENNESSEE.

Mounds and Sites.

Mound near Ellis Creek, Livingstone County, Kentucky.
Cemetery near the Star Lime Works, Lyon County, Ky.
Mounds on the Henson Place, Marshall County, Ky.
Mound near Barrett Ferry, Stewart County, Tennessee.
Mounds on the A. J. Gray Place, Stewart County, Tenn.
Cemetery on the T. J. Gray Place, Stewart County, Tenn.
Dwelling site on the Thompson Place, Henry County, Tenn.
Mounds near Leatherwood Creek, Stewart County, Tenn.
Dwelling-site on the Sykes Place, Benton County, Tenn.
Mounds and Dwelling-site near Dixie Landing, Humphreys County, Tenn.
Dwelling-site at Prevatt's Landing, Benton County, Tenn.
Mound near West Shipp's Landing, Benton County, Tenn.
Dwelling-site at Leadbetter Landing, Benton County, Tenn.
Mounds opposite the mouth of Cedar Creek, Decatur County, Tenn.
Dwelling-site near mouth of Beech Creek, Wayne County, Tenn.
Mound near Old Furnace Landing, Decatur County, Tenn.
Mounds on Swallow Bluff Island, Decatur County, Tenn.
Mound at Old Callens' Landing, Hardin County, Tenn.
Mound near Dickey's Landing, Hardin County, Tenn.
Mounds on the Williams Place, Hardin County, Tenn.
Mounds at Savannah, Hardin County, Tenn.
Mounds opposite Wolf Island, Hardin County, Tenn.
Mounds near Perkins Bluff, Hardin County, Tenn.
Mound near Pittsburg Ferry, Hardin County, Tenn.
Mounds near Pittsburg Landing, Hardin County, Tenn.
Mound near Nash Landing, Hardin County, Tenn.
Mounds below North Carolina Landing, Hardin County, Tenn.
Mound near North Carolina Landing, Hardin County, Tenn.
Dwelling-site near Pickwick Landing, Hardin County, Tenn.
Mound near Boyd's Landing, Hardin County, Tenn.
Mound near Swan Pond Landing, Hardin County, Tenn.
Mounds near the mouth of Yellow Creek, Hardin County, Tenn.



MAP OF TENNESSEE RIVER
IN KENTUCKY AND WESTERN TENNESSEE

Scale in miles
0 5 10 20 30
1915

MOUND NEAR ELLIS CREEK, LIVINGSTONE COUNTY, KENTUCKY.

In woods belonging to Mr. W. F. Buford, who lives nearby, was a mound of loamy clay, about one mile in a northerly direction from the union of Ellis Creek with Tennessee river. This mound, which had undergone considerable disturbance previous to our coming, was two feet in height. Its length and breadth were respectively 64 and 38 feet. On the surface lay a number of slabs of silicious rock, the largest being about 2 feet by one foot, with a maximum thickness of 3 inches, and was about as large as any subsequently found by us in the mound.

Five badly disturbed stone graves and two complete ones, all of the box variety, were encountered by us in an investigation which included a large portion of the mound.

Burial No. 2 had its upper slabs about one foot below the surface of the mound. These slabs, which were in two layers, were not found evenly placed, and presumably had undergone disturbance either through the settling of the soil or on account of roots of a tree, which had entered the grave. The supporting slabs at the sides, of a single thickness, were not vertical but sloped inward, and while the margins of some of the upper slabs projected above the general level, others had fallen into the grave. The grave, which was without slabs on the bottom, was somewhat contracted toward the upper part. Its inside measurements were: width, at the top, 10 inches; at the bottom, 21 inches; depth, 14 inches; length, 6 feet 5 inches. The grave lay ESE. and WNW.

The skeleton, traceable by friable fragments (the greatest, four or five inches in length) and a few teeth, evidently had been extended, heading eastward. Near where the skull had been was a pendant of indurated clay, originally copper coated, having on one side a deep groove. Also near the head, together, were what seems to be a claw represented in wood and a perforated object of bone partly decayed, hollowed out on one side perhaps to serve as a socket for the claw, which shows no perforation or groove for independent attachment. Both these objects had been overlaid with sheet-copper whose salts had preserved a small piece of matting found with them. In the grave also, but perhaps of accidental introduction, were several chips of flint.

Burial No. 3 was without trace of bone. The grave, whose upper slabs lay one foot below the surface of the mound, was in outside measurement: length, 3 feet 8 inches; width, 1 foot 6 inches; height, 14 inches. It extended NNW. and SSE. This grave, which had not suffered disturbance as had the other, showed an effort had been made to keep an even upper margin for the slabs at the sides in order to have those on top as level as possible. The slabs, however, as in Grave No. 2, had no uniformity of size and but little in shape, some being almost triangular, though a tendency could be noted, perhaps, to have the stones roughly oblong. Although some care had been taken to protect the burial, and in some instances slabs five or six inches square had been used, presumably to cover

openings, other openings remained, and through these soil had entered the grave.

This grave, without slabs at the base, was covered in double thickness, the upper layer being composed of five slabs, and four fragments to act as stop-gaps, the under layer having four slabs and three fragments. On one side were three large slabs, while the opposite side was made up of seven smaller slabs and four fragments. At each end was a single slab.

In part of a grave which had been left by previous diggers who were said to have been treasure-seekers and whose methods of search were not such as investigators employ, was a group of five mushroom-shaped objects of earthen-



FIG. 5.—Trowel of earthenware. Mound near Ellis Creek, Kentucky. (Full size.)

ware, of a kind now believed to have served as tools in the making of pottery vessels, and which are described and figured by Jones,¹ Thruston,² and Holmes.³ One of these tools, whose handle terminates in a rude representation of an animal's head, is shown in Fig. 5. With these tools, the largest of which is 4.8 inches in diameter and 2.75 inches in height, was an object of indurated clay, somewhat resembling a semilunar knife in shape, though its capacity for cutting must have been limited.

CEMETERY NEAR THE STAR LIME WORKS, LYON COUNTY, KENTUCKY.

On high ground immediately back of the Star Lime Works, formerly in woods but now partly in cleared ground, in property belonging to Mr. Crit Nickell, living nearby, are the remains of a small stone-grave cemetery which has been

¹ *Op. cit.*, p. 143.

² *Op. cit.*, p. 161 *et seq.*, Fig. 65.

³ 20th An. Rep. Bur. Am. Ethn., p. 99 *et seq.*, and Pl. XXXV.

dug into for many years and recently has been in part plowed over. Groups of slabs lately plowed up were seen by us on the field and other slabs lay in the adjoining woods. Careful prodding by us all over the ground failed to come upon stone graves. There is no history of artifacts having been found in the graves at this place.

MOUNDS ON THE HENSON PLACE, MARSHALL COUNTY, KENTUCKY.

On property belonging to Mr. W. A. Henson, who lives upon it, are a number of mounds which may be reached from the river by going in from the mouth of Jonathan creek, about one mile in a southerly direction, though the distance by the road is somewhat greater. We were informed by Mr. Henson that these mounds, all of which had been under cultivation for a long time (the Henson property having been in the family for one hundred years), had no history of discovery of artifacts or bones.

A short distance from the road, near together, are two mounds, the larger of which, with flat top, very irregular in outline owing to cultivation, is 11 feet 6 inches in height. Its length is 265 feet. Measurements of width would vary considerably; one taken near the middle of the mound gave 142 feet. The smaller mound, also with flat top, evidently had been quadrangular. Its height is 8 feet 6 inches; its basal diameters, 118 and 128 feet. Farther back in the field, but in full view from the mounds just described, is another which has lost much in height through cultivation, as shown by denuded roots of trees upon it. Its height is 5 feet 6 inches; its basal diameters, 110 feet and 180 feet. Other rises in the field have been largely plowed away. As these mounds, in our opinion, had been domiciliary, they were not accorded a thorough investigation. Trial-holes made in them yielded no positive result.

Near the two larger mounds, but across the road, in woods, are five or six humps or knolls, each from 3 to 4 feet in height and about 40 feet in diameter of base. These small mounds had been much dug into, some having five or six holes, left presumably by treasure-seekers. We were informed that human bones had been found by diggers some time ago, and in our investigation, which covered about all parts left of the mounds, we came upon the remains of a stone grave, though no other evidence of burial in the mounds was encountered.

MOUND NEAR BARRETT FERRY, STEWART COUNTY, TENNESSEE.

On property belonging to Mr. William Vinson, who lives upon it, is a mound in a cultivated field, about one-half mile NNW. from Barrett Ferry Landing. According to Mr. Vinson, this mound has been plowed over for nearly seventy-five years, and so far as he knows, nothing in the way of bones or artifacts has been taken from it, though the mound has been greatly reduced in height during cultivation. The mound, which no doubt is greatly spread, is roughly circular as to the base, the present diameter being about 100 feet. The height is 4.5 feet. Our investigation showed this mound to have had fireplaces at various levels, but yielded neither bone nor artifact.

MOUNDS ON THE A. J. GRAY PLACE, STEWART COUNTY, TENNESSEE.

About one mile in a northerly direction from Moltke, a settlement on the river, are two mounds near together in a cultivated field, in full view from the road leading from the landing at Moltke. These mounds are on the property of Mr. A. J. Gray, whose residence is in sight from them.

The mounds have been plowed over for a long time and their height evidently has been much reduced. Midden debris, including fresh-water shells, fragments of coarse pottery, and broken implements of flint, is abundant on their surface and on the field which surrounds them. A small bi-cave stone, a disc wrought from a fragment of a pottery-vessel, a similar disc centrally perforated, 1.5 inch in diameter, several arrowheads of flint, two agricultural implements of the same material, one rather rude, several flint knives, were picked up on the surface.

The easternmore of the two mounds, 6 feet in height at the time of our visit, had a diameter of 96 feet. Trial-holes in its central part came upon no sign of burials, but among others that were put down near the margin of the mound, one uncovered a skeleton extended on the back, lying on a fireplace about 22 inches below the surface. This skeleton, which showed no trace of fire and was not enclosed in slabs, was much decayed and fragmentary. Near the skull was a pot about 3 inches in height, on which two loop-handles had been, resting in the fragments of a bowl which had possessed handles similar to the others. Near these vessels, which are of coarse ware, was a bowl with an extension from one side to represent the beak of a shell—a common form for earthenware in the Middle Mississippi region.

At the same fireplace, but not near enough to the skeleton to connect them with it, were fragments belonging to several vessels of earthenware, but not the full complement. Among these was a well-modeled effigy of a human head which had formed part of a bowl.

A smaller mound, 3 feet high and 75 feet in diameter, was on a ridge giving the mound an appearance of increased height on one side. Our digging yielded no trace of interments.

Near this mound the level ground is very dark and gives every appearance of long occupancy in the past, but as the field was planted with clover, our digging was of necessity limited. Some trial-holes which we kindly were permitted to put down came upon no trace of burial, though a flint spade was unearthed from one of them.

CEMETERY ON THE T. J. GRAY PLACE, STEWART COUNTY, TENNESSEE.

This property, adjoining that of Mr. A. J. Gray and belonging to Mr. T. J. Gray, who lives upon it, includes a field immediately south of the A. J. Gray Place in which is a ridge extending N. and S., thickly strewn with slabs of shale, which according to Mr. Gray, the owner, had been plowed up in course of cultivation of the field. Very many others, we were told, had been gathered and

hauled away from this ridge, which proved to be what was left of a small stone-grave cemetery.

Of the remaining graves, we opened nineteen, all of the regular box variety, and then, in view of the disturbance that had been wrought by cultivation, which precluded obtaining complete data, and of the fact that no artifact was found in any of the graves, we discontinued work, hoping later to come upon a more representative site, though in point of fact we found no stone-grave site equally desirable on the whole Tennessee river.

The nineteen stone graves which were encountered singly or in groups, but never more than five together, were none more than a few inches below the surface and had, in most cases, been disturbed to some extent by the plow. Their length ranged between 6 feet 7 inches and 19 inches, inside measurement.

The graves had been placed as follows: N. and S., 1; NE. by N., and SW. by S., 1; ENE. and WSW., 3; E. by N. and W. by S., 5; E. and W., 8; E. by S. and W. by N., 1.

Human remains, when found at all, were badly decayed, sometimes mere traces, and in the case of children no more than crowns of teeth—sometimes but one or two. Once or twice bones of adults were distinguishable throughout the burial, but even these were friable and past all chance of preservation. In eight graves no trace of bones was apparent. Of these, five had belonged to children,¹ two to adults, and one had been disturbed by the plow so that the size was undetermined.

Of the eleven graves containing human remains, eight had belonged to adults and three to children.

Nine burials had headed in a westerly direction and one toward the north, the determination at times being based on the position of teeth or of fragments of skull in the grave. One grave containing minute traces of bone afforded no indication of the former direction of the head. Its size, however, indicated the grave of an adult.

As to the arrangement of the body in the grave, no determination was possible in the case of children. Where it could be made in the graves of adults, the burial had been at full length, though in one instance the skeleton which in this case was clearly distinguishable, was considerably out of position as to the upper part of the body, the bones of the lower extremities, however, being in order. This disarrangement, moreover, was not attributable to contact with the plow, as the bones had been amply protected by the slabs of the grave.

The stone graves at this place, all of which were of the box-grave variety, had been made with considerable divergence as to minor detail. Sixteen had a flooring of slabs, while three were without this feature. The stone flooring was invariably of one thickness, though some of the graves had double thickness on top and at the sides, and, in one instance, even at the head and the foot.

¹ We attribute these graves to children, fully realizing the fact that some small stone graves contained disjointed bones of adult skeletons (see Thruston, *op. cit.*, p. 29), but these graves at the T. J. Gray Place were considerably smaller than are the ones referred to by Thruston and other writers.

Apparently the graves had first been dug and then enclosed interiorly with slabs. Then, perhaps to support the slabs additionally, the grave was filled in part with soil, after which the slabs for the floor were placed in position in the cases where they were used. For example, in one case, a side slab nearly 20 inches in height, belonged to a grave about 9 inches in depth, inside measurement. All the graves, however, did not show so marked a difference between the height of the slabs at the sides and the depth of the grave.

The slabs used for flooring were from one to two inches in thickness; therefore, as there was usually a space under the floor of the graves, enclosed by the side and end slabs, it occurred to us that possibly burials or artifacts might have been placed in these spaces also. Consequently all such were dug out with a trowel, with the utmost care, without, however, finding bones or artifacts with the exception of a single fragment of pottery, which probably got in accidentally with the soil.

As the reader perhaps is not familiar with the minutiae of stone graves, a description of some from this place will be given in detail. The slabs are of shale, probably from the hillside a few yards distant. All graves had become filled through percolation of the soil.

Burial No. 4, extending ENE. and WSW. The top, in two layers, considerably overlapped the sides of the grave. The upper thickness of the top was composed of four slabs; the under layer, of five slabs and a fragment probably used as a stop-gap. One side had three slabs and a fragment, while the other side had but two slabs. The floor, about eight inches of which was uncovered at one end, was made up of five slabs. One upright end of the grave was a single slab; two narrow ones had been placed at the other end. The inside measurements of this grave were: length, 2 feet 10 inches; width, 1 foot 5 inches. The depth was 4.5 inches, though one of the side slabs had a height of 14 inches.

Burial No. 7, placed E. and W., seemed undisturbed. The top was made up of five slabs and one small fragment in a single layer. At one side were three slabs and five fragments, a single thickness; the other side, in two layers, was made up of eight slabs and two fragments. The head of the grave, in double thickness, had three slabs. The foot, also double, was composed of three slabs and a fragment. The floor was paved with six slabs and two small bits of stone. This grave, 3 feet 8 inches by 11 inches, had a depth of 6 inches, all inside measurements. The only human remains encountered consisted of the crown of a child's molar tooth, in the western end of the grave.

In the two burials described numbers of small slabs were used in enclosing the graves, but sometimes large slabs were employed. One of the largest graves found at this place had but two slabs to complete its entire length.

The foregoing was written after a visit to the T. J. Gray Place on our way up the river. On the way down we made further investigation there in the hope of finding a stone grave or graves symmetrical and complete to a degree to make illustration desirable, which we did not consider we had done at the time of our first visit.

On our second visit we were less exacting, and in one instance, at least, enjoyed better fortune.

Among the wreckage of graves, all near the surface, we came upon the following stone box-grave burials worthy of description, besides a number of others which were too badly disturbed to merit it.

Burial No. 20, a beautiful little box-grave 3 feet 1 inch long, 1 foot 8 inches wide, and 10 inches in height, outside measurement. This little grave, which extended NE. by E. and SW. by W., had been constructed of slabs of sandstone



FIG. 6.—Burial No. 20. Stone box-grave of a child, 3 feet 1 inch by 1 foot 8 inches. T. J. Gray Place, Tenn.

and of claystone in one and two thicknesses, small masses having been placed here and there to cover every opening so that no part of the grave was unprotected. Among the smaller stop-gaps were two water-worn boulders of silicious material, each about the size of a man's foot. This interesting grave, which we show in Figs. 6, 7, intact and as it appeared after the removal of the covering slabs, had an inside measurement of 2 feet 5 inches by 10 inches, by 9.5 inches in depth, and possessed a flooring of slabs, as did all the entire graves investigated by us at the time of our second visit. The child's bones that doubtless once rested in this grave presumably had long since decayed away.

Burials Nos. 21 and 22, two graves parallel throughout, about one foot apart, each 7 feet long and 2 feet 3 inches wide, approximately. The tops had been

plowed away. These graves ran easterly and westerly and extended across the narrow rise in the field in which the stone graves were, as did all the graves found by us on this second visit, the skeletons in them, where any traces remained, having the heads at the western end. The two burials under description, like all determined by us at this place, had been at full length on the back.

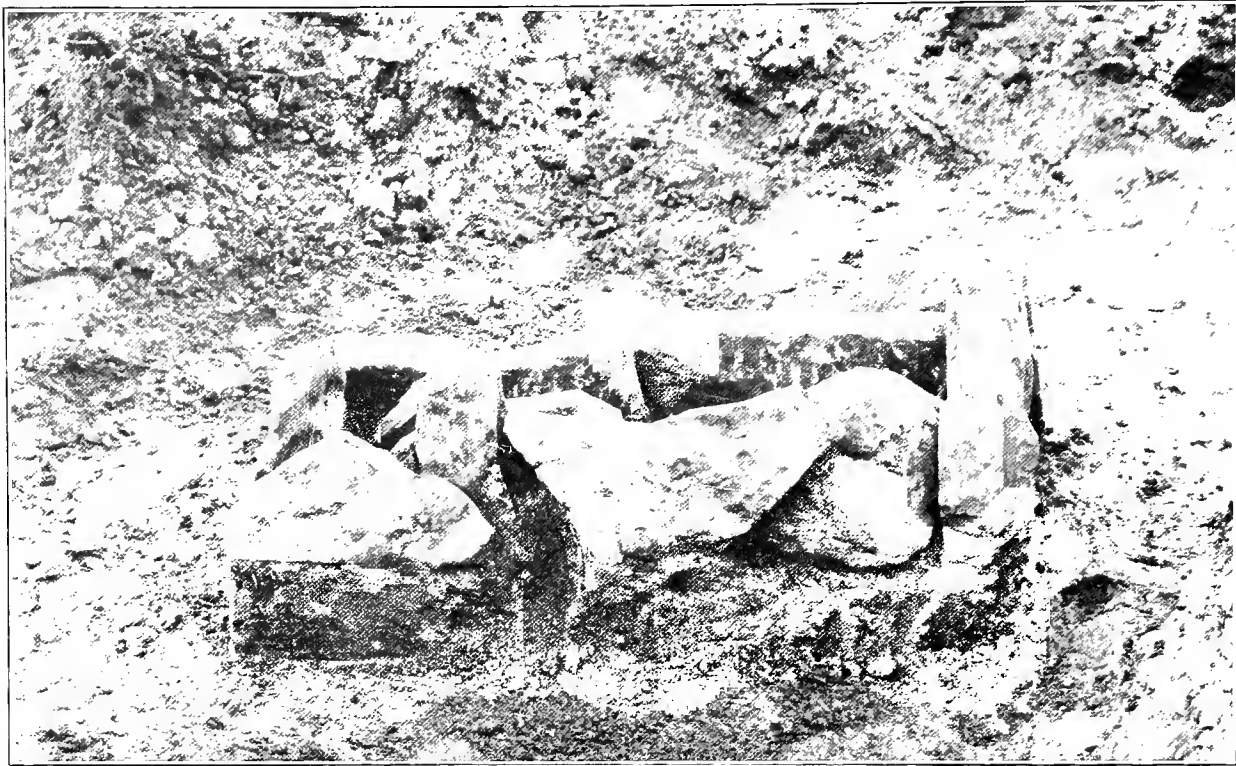


FIG. 7.—Burial No. 20, the covering of the grave removed. The skeleton had disappeared through decay. T. J. Gray Place, Tenn.

Burials Nos. 23, 24, 25, 26. These four box-graves in a group had, with one exception, lost their covers by contact with the plow. Two of them, 6 inches apart, were parallel throughout. Two other graves, in line with the former ones, were not side by side to their full extent, an end of each projecting beyond the corresponding end of the other. Burial No. 23, the one shown in Fig. 8, was 7 feet 10 inches long by 2 feet 8 inches wide, its inside measurements being 5 feet 10 inches by 1 foot 6 inches, by 11 inches in depth. The foot-stone of this grave seemed to have been in common with a grave extending in line from it. The bones in these four graves, though traceable throughout, were badly decayed.

Burial No. 27, a skeleton represented by fragments, in a box-grave, as were or had been all at this place, 7 feet by 2 feet 6 inches over all, extending due E. and W. (Fig. 9). In the illustration it is interesting to note a slab placed above the others in order to cover a space otherwise left unprotected. The inside measurement of this grave was 6.5 feet by 1 foot 7 inches, by 1 foot in depth.

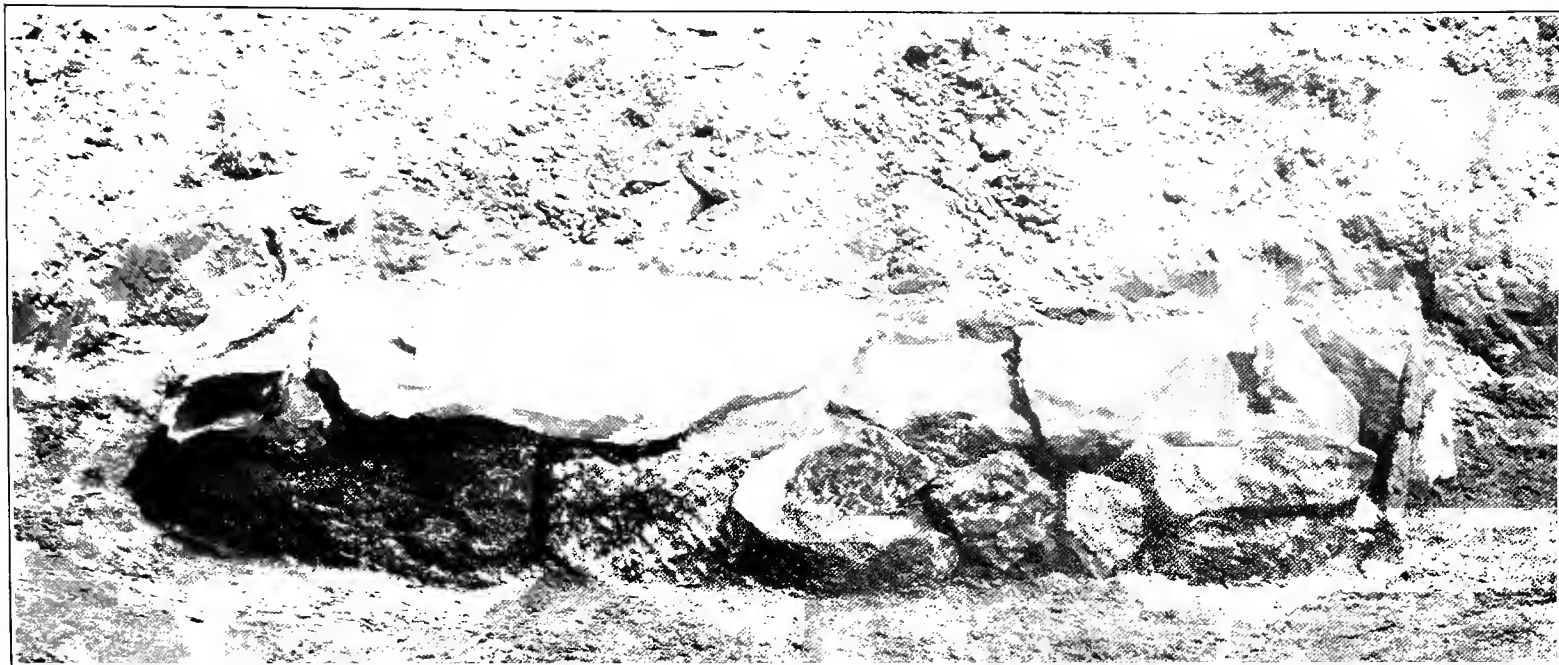


FIG. 8.—Burial No. 22. Stone box-grave, 7 feet 10 inches by 2 feet 8 inches. T. J. Gray Place Tenn.



FIG. 9.—Burial No. 27. A stone box-grave, 7 feet by 2.5 feet. T. J. Gray Place, Tenn.

Burial No. 28, a grave running due E. and W., 5 feet 8 inches long by 1.5 foot wide, the inside measurements being 5.5 feet by 1 foot 2 inches, by 10 inches in depth (Fig. 10). In this grave most careful search failed to discover any trace of human remains.

In none of the stone graves at this place was so much as a chip of flint encountered.

Crossing the road which borders the field in which the stone graves were, one comes to the foot of a hill near the top of which, but still on a gentle slope, is a



FIG. 10.—Burial No. 28—Stone box-grave, 5 feet 8 inches by 1 foot 6 inches. T. J. Gray Place, Tenn.

mound slightly more than 7 feet in height, measured from the side highest on the slope, and having diameters of 58 feet and 43 feet. This mound (A), which extends NE. and SW., has on top a flat ridge 27 feet long and 4 feet in width.

About 85 yards SSE. from Mound A is another mound (B) in the shape of a ridge extending NNE. and SSW. Its height is 10 feet; its basal length and width are 110 feet and 48 feet, respectively. Its top, which is flat, is 62 feet in length by 5 feet in width. This mound, previous to our visit, had been dug into in two places to a considerable extent, the sides of the excavations indicating that it was composed of the surface clay of the hill with an occasional fragment of rock of the kind which lies plentifully on the hillside.

About 75 yards SW. from Mound B was a mound (C) having a square base and a square summit-plateau. Its height was 5 feet; the diameter of the base, 45 feet, and that of the summit-plateau, 17 feet.

Just back of Mound A, a few feet apart, in line, are two small mounds, that nearest Mound A having a height of 3 feet and a basal diameter of 34 feet. The other mound is 30 feet in diameter of base and 1 foot 8 inches in height.

In that side of Mound A which was highest on the slope, a trench 18.5 feet long by 8 feet in width was dug, beginning somewhat in from the margin and including the central part of the mound. From the outer end of this trench a narrow one was dug to the apparent margin along the yellow, underlying soil.

The mound was composed of the surface soil of the hill, sometimes almost without masses of rock, sometimes with a mingling of angular, silicious masses such as one sees on the surface of the hill, few larger than the head of a man, most much smaller. In places also masses of rock were piled together almost without admixture of clay, and these masses, by pouring out from the side of the excavation into the space at the inner end of the trench, which had been greatly enlarged by us, seriously impeded our work. In fact it became evident that unless the mound was investigated with the aid of a larger force of men than was at our disposal, or that far more time was allotted to it than was at our command, exact data could not be obtained, much of the stone deposit requiring removal by hand.

The investigation strongly indicated that the actual height of the mound was considerably in excess of that determined by us from the part highest on the slope, for besides the likelihood of getting a minimum altitude from such a base, digging showed later that made-ground to a depth of about 3 feet was present on that side of the mound, probably a kind of extension the presence of which would decrease the height of the mound at that part to correspond with the depth of the extension.

Seemingly the mound had been built largely of masses of rock, having clay and clay with a mingling of rock exteriorly and sometimes in layers in the body of the mound. What we believed to have been the original surface of the hill was reached at a depth of 11.5 feet.

Burials had been made in this mound, possibly throughout it. In our central digging they were found lying among the masses of rock about 10 feet 7 inches from the summit of the mound, about one foot above the base. This burial contained bones of at least three individuals, two adults and an adolescent. The parts of the skeletons were not in order and were spread over considerable space. Possibly the burial included more individuals than we have stated, as before the bones were entirely removed an inpouring of masses of rock in a rather threatening way prevented further investigation at that point.

In the extension at one side of the mound, to which we have referred, just under the slope of the mound, the trench put down by us, passing through clay without masses of rock, reached a burial having mingled bones, including two skulls of adults, at a depth of 3 feet 9 inches. With these bones were two conch

shells (*Busycon perversum*) in bad condition, one having a round hole in the front of the body whorl, and the other a small perforation at the end of the beak and another about in line in the body whorl, above the shoulder, near the opening.

In the larger of the two small mounds back of Mound A an excavation 8 feet square was put down centrally through clay similar to that on the surface of the hill, containing masses of rock here and there. At a depth of 3.5 feet, about in the center of the base of the excavation, were remains of bones of one individual, badly decayed, not in order. At a short distance from these bones, perhaps not connected with them, was a small aggregation of masses of rock and a deposit of charcoal.

Beginning somewhat above the margin of the NW. side of Mound C a trench was begun 22.5 feet by 10 feet, extending through the center of the summit-plateau. At a depth of about 1.5 foot the clay containing a few masses of rock, through which the digging had been done, came to an end, below being masses of rock only, averaging about the size of a clenched hand, some larger, many smaller, packed together and containing in the upper part clay in the interstices. Soon practically no clay was found, the mound being simply a heap of stone masses, comparatively small, wedged together, which after loosening with the aid of a pick, rolled from the shovels in the tossing so that our men, unused to such material, were almost as ineffective as is a beginner who essays eating peas with a knife.

After a depth of 3.5 feet had been reached, work in the outer part of the trench was discontinued and the masses of rock remaining in an area 10 feet square at the inner end of the trench were tossed out by hand, gray clay containing small masses of rock being reached at a depth of 5 feet 2 inches. This stratum of clay proved to be about one foot in depth and to have formed on the solid rock of the hill.

It may be said, almost with certainty, that this mound consisted of a great core of masses of rock, its symmetrical shape having been conferred by exterior application of clay.

No burials were found, nor did we expect to encounter any in this mound, which doubtless was domiciliary, as denoted by its form.

We append the opening part of Chapter XI of Mr. Fowke's sterling work, "Archæological History of Ohio," this chapter treating of stone mounds, stone graves, etc., and though referring to Ohio mounds, applies equally well to those under consideration at this place.

"Where stones of convenient size for handling can be readily collected, they are often used instead of earth for construction of mounds. This is especially the case upon high lands or in other situations favorable to denudation by the action of winds or rains. Such erosion has a double effect. Stones formerly covered are left loose upon the surface; and earth which resists wash is often tough and heavy, requiring much effort for its removal. In either event, the rock material may be easier to procure and is equally adapted for the purpose. In some cases,

a mound of stone was enlarged by heaping earth over it; in others, the two substances are mingled throughout; but, as a rule, only stones were used in the larger structures, the debris now filling interstices being the accumulation from dust and decaying vegetation which has gradually worked downward from the surface to the interior."

DWELLING-SITE ON THE THOMPSON PLACE, HENRY COUNTY, TENNESSEE.

Following the road bordering the river about one mile in a southerly direction, an aboriginal dwelling-site is reached on property belonging to Mr. F. A. Thompson, of Springville, Tenn., situated along the bank of the river. This site, which covers a number of acres, has much debris on the surface. Among other objects, a number of arrowheads of flint, nearly all triangular, were picked up, and a well-wrought flint point, 5.75 inches in length, from which, however, the extremity is missing. The soil is a loamy sand.

In one place on the site fragments of human bones lay on the surface, and trial-holes put down in the vicinity almost at once came upon shallow burials, none more than 15 inches in depth and some considerably less, though the dark soil containing midden refuse extended downward several feet. Nine burials, eight of adults and one of a child, were found, the bones in fairly good condition though none of the skulls was entire. The burials, with the exception of that of an adult, which had been disturbed, and the remains of the child, as to which determination was not possible, lay extended on the back, the heads of three directed SW., and those of the remaining four WSW. No artifacts were with the remains.

MOUNDS NEAR LEATHERWOOD CREEK, STEWART COUNTY, TENNESSEE.

One-half mile ENE. from the mouth of Leatherwood Creek are two mounds each about 2.5 feet in height and 25 feet in diameter, estimated by our agent. Owner, Grange Plantation Company, Stribling, Tenn. Permission not granted.

DWELLING-SITE ON THE SYKES PLACE, BENTON COUNTY, TENNESSEE.

This dwelling-site, on property belonging to Mr. L. J. Sykes, of Eva, Tenn., is reached by following the road from West Sykes Landing (formerly Holland Landing) for about one mile in a westerly direction. The aboriginal site, in a cultivated field, in full view from the railroad passing through Johnsville, a town on the river, is somewhat higher than the rest of the field, and ends in an elevation at the north, with gently sloping sides. The entire site, presumably, had slowly grown, under prolonged occupancy, above the level of the rest of the field. The whole surface of this dwelling-place is so thickly strewn with fragments of flint (flakes, chippings, and here and there a broken point) that it was literally impossible to put one's foot down without treading upon a bit of flint of some kind, and sometimes upon a number of them. In this great quantity of rejected material, however, objects of interest were scarce, a prolonged search resulting in the discovery of two arrowheads and a small hatchet or chisel.

The surface material differed from some we have seen on sites along Tennessee river in that no pottery was present; nor was a single shell to be seen. Moreover, no pottery fragments were found in the digging. Abundance of fresh-water shells were mingled with the soil, none, however, being within 18 inches of the surface, though this upper soil was as dark as that below it and evidently had not been brought there to increase the height of the site, but had grown under occupancy, like the rest. Evidently, then, during the latter part of the occupancy of the site, shell-fish were not in use as an article of diet.

An excavation carried from the highest part of the elevation to which reference has been made, went through nearly 6.5 feet of midden soil before reaching underlying, undisturbed ground. The first 18 inches, as stated, contained no admixture of shells. Then came about 4 feet having in the upper part numerous shells, the number growing fewer until in the last foot they were encountered at rare intervals. The final foot of the excavation, however, had many shells scattered through it.

Apparently those inhabiting this dwelling-place had buried where they lived, though no regular cemetery was encountered by us. Four skeletons were found as a result of considerable digging, at depths ranging between 10 and 39 inches, lying closely flexed, one on the right side and three on the left. The heads respectively, were directed N., N. by W., NW., N.

These burials, which were unenclosed, had no associated articles, with the single exception that with the deepest one had been placed a musselshell containing a small amount of red oxide of iron in powder.

MOUNDS AND DWELLING-SITE NEAR DIXIE LANDING,¹ HUMPHREYS COUNTY, TENNESSEE.

On property of Mr. J. H. Pearl, who resides there, within sight from Dixie Landing, on high ground somewhat back from the river, is a mound, once quadrangular with a level summit-plateau. The mound, 8.5 feet in height, measured from the east, where it adjoins a great level field, seems of much greater altitude on its other sides, which in appearance are heightened by sloping ground on which they rest. The basal diameters of the mound, whose sides face the cardinal points and whose longer ones are parallel to the river, are 188 feet N. and S. and 125 feet E. and W. The summit-plateau is 112 feet and 50 feet in the same directions, respectively. The mound has been under cultivation.

As is well known, large, flat-topped mounds in southern United States very rarely contain objects of interest, having served, as a rule, for purposes other than those of burial; yet as interments sometimes were made in superficial parts of such mounds, it is well for the investigator to sink trial-holes into them superficially at least. In the mound under description trial-holes soon reached raw clay having no trace of interments.

¹ There is another place of this name a few miles above this one, also in Humphreys County.

At about a depth of one foot, however, was a fireplace near which, in a symmetrical heap resembling a cone with rounded apex, were nineteen masses of soft, fossiliferous limestone, more or less rounded and ranging in size between a clenched hand to double that bulk. These masses, presumably intended as supports for vessels while cooking was in progress, had most likely been carefully piled near the fireplace for convenience, and for some reason had not been removed when the fireplace was abandoned.

To the east of the mound, on the level field, was considerable midden debris, including bits of flint and of pottery. At one place where fragments of human bone lay on the surface, trial-holes were put down which almost at once reached human remains, as follows: a skeleton disturbed by cultivation; an extended skeleton, the head directed S. by W.; a layer of bones, including three crania; an extended skeleton heading S.; the bones of an adolescent, lying partly flexed on the left side, the head directed SSW.; a skeleton at full length, the cranium pointing N. by W. The skull and the upper part of the thorax of this skeleton lay beneath the margin of a fireplace and were calcined. The use of fire in connection with this burial perhaps was accidental. Parallel with this skeleton were two others, from each of which the skull and the upper part of the thorax were missing. On the pelvis of one of these skeletons lay a skull.

Near the three burials last described was another, that of an adult, lying under the fireplace to which reference has been made. This burial, which had been wholly beneath the fireplace, was in anatomical order up to the lower part of the thorax, the upper part of which, along with the skull, was missing and apparently had been disturbed through digging, aboriginal or otherwise, as the fireplace at this point was broken through and parts of it, along with ashes, were mingled with the soil.

Two feet six inches deep was another fireplace at some distance from the one described, which had been burnt so hard that when found with the aid of a steel rod it was taken for a rock or a slab forming part of a stone grave. About one foot above part of this fireplace were a number of scattered human bones showing no trace of fire, while at about the same level and over another part of it was the upper half of a skeleton on which no sign of fire was apparent.

In this field was the remnant of a small, low mound which yielded no return to trial-holes.

Farther north, in sight from the large mound, paralleling the river which it commands to the N., S. and W., is an elevation in the form of a ridge. The northern end slopes somewhat abruptly; the descent on the southern extremity, steep at first, reaches a small rise or hump from which the slope is gradual. The measurements of this elevation are as follows: height of ridge, which runs N. by E. and S. by W., taken from the northern end, 12 feet 9 inches; length of base, 170 feet; length of top, northern slope, 32 feet; crest, 88 feet; southern slope to the hump, having a drop of 6 feet, 22 feet; the hump and from it to level ground, 28 feet. Width of base, 58 feet, as follows: eastern slope, 24 feet; crest, 5 feet; western slope, 29 feet.

An excavation 12 feet by 20 feet was sunk by us about midway of the length of the mound, the longer axis of the hole corresponding to that of the mound, which proved to be composed of a loamy clay. The base was reached at a depth of 9 feet 10 inches, our outside measurement having been taken where there had been considerable wash on the field and in consequence the height of the mound there was greater than its original height. On the opposite, or western side, the apparent height was even greater, as one there would be looking up a slope.

Burials were found as follows:

Burial No. 1, at a depth of 6.5 feet, disconnected bones having belonged to one individual, a heel-bone below the skull, the lower jaw away from the calvarium, the long-bones out of place. These bones, in common with all from this mound, were much decayed.

Burial No. 2, 7.5 feet down, disarranged bones including two skulls, not piled as in a bunched burial but spread. A layer of clay of a much purer grade than the material of which the mound was made, lay under Burial No. 1, and in part over Burial No. 2, which also had clay under it. Layers of this kind were found elsewhere in the mound apart from bones, which probably had decayed away.

Burial No. 3, 8 feet 6 inches deep, disarranged bones belonging to one skeleton.

Burial No. 4, at about the same depth as Burial No. 3, consisted of mingled bones having belonged to one individual.

Burial No. 5, on the base of the mound, resting on charcoal or decayed bark and wood, was a scattered deposit of mingled bones covering considerable space, having belonged to at least seventeen individuals, that number of skulls being represented. This burial did not lie in a grave, apparently, or if in one, its depth must have been inconsiderable, as undisturbed local

layers lay above the burial to a considerable distance in the mound.

Burial No. 6, on the base, part of a child's tibia.

Burial No. 7, seven inches above the base, scattered bones belonging to one skeleton.

The entire base of the excavation was carefully spaded through in the hope of coming upon a grave-pit or a ceremonial deposit, but without success.

A few feet from the side of the northeastern end of the mound was a slight rise above the level at that place, about 24 feet in diameter, showing up red in the

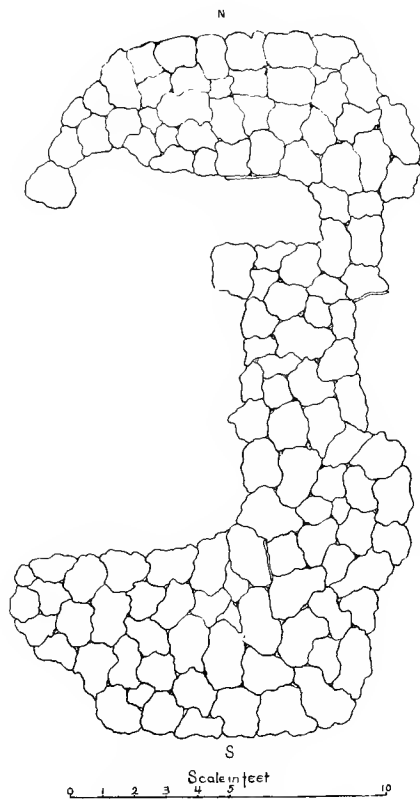


FIG. 11.—Plan showing placement of slabs. Dixie Landing, Tenn.

plowed field and proving to be made up of particles and masses of clay, reddened by heat, some of the masses bearing imprints of wattle.

Investigation showed this reddened clay to have a maximum thickness of about 2 feet. Beneath it was an arrangement of thin slabs of limestone, of claystone, of fine-grained sandstone, some calcined, others flaked by the effect of heat, lying in one thickness as a rule, but occasionally in double and in triple layers. These slabs were not arranged with a view to an exact level, a few even having been placed on edge. The arrangement, of very irregular outline, as shown in Fig. 11, was about 22 feet long and 12 feet in maximum width, approximately.

The slabs rested on a smooth, hard surface of baked clay resembling a floor, on which was no charcoal or deposit of ashes.

All these slabs, of course, were removed by hand with great care, but nothing was found between them and the hardened clay beneath (under which digging came upon undisturbed soil), except at one place near the northern end of the arrangement of slabs where were found a few fragments of calcined bones, some undoubtedly human, the remainder too small to identify but presumably also parts of a general cremation. Near this place, but above the slabs, also were found a few fragments of calcined bones.

Presumably the aborigines, in connection with this cremation, had proceeded in the following way: Human remains were placed on the ground, which seemingly had been either purposely smoothed in advance or, which is more likely, was the trampled, earthen floor of a wigwam, and the arrangement of slabs laid upon them.

Next a wigwam standing over the remains or near them, was burnt down and the clay from its wattle and daub walls, while still at high temperature, was piled over the slabs and the bones beneath, the intense heat calcining and flaking some of the slabs and consuming most of the human remains.

The clay from the walls of the building must have been intentionally piled over the remains, and not simply have been allowed to lie where it fell, inasmuch as the wattle and daub walls of wigwams were not more than 3 or 4 feet in height, and from them a roof of material unmixed with clay sloped upward. Hence some labor was required to bring the heated clay from where it fell at the outer part of the fire and to arrange it so as to make the highest part of the deposit in the center of the rise as it was found by us.

In connection with this striking ceremony the description of the Bennett mound in this report will prove of especial interest.

In the field, near the great ridge, was a low elevation from which a stone grave had been plowed shortly before our coming, the slabs and fragments of human bone lying on the surface at the time of our visit. Digging at this point came upon no other stone grave or burial of any kind.

All burials found at this place were without artifact of any kind, yet it was in the same county (Humphreys), where this site is, on Duck river, probably not

more than ten miles away, that the superb deposit of flint implements now in possession of the Missouri Historical Society, to which we have already alluded in the introductory remarks, was found.

DWELLING-SITE AT PREVATT'S LANDING BENTON COUNTY, TENNESSEE.

At Prevatt's Landing, the property of Mr. H. E. Whitfield, living nearby, is a ridge in a cultivated field bordering the river bank, composed of rich, dark, loamy sand and having on the surface fragments of pottery, cord-marked when bearing any decoration, and some flint, including a few arrowheads. Other arrowheads of flint were encountered in the digging, as were several piercing implements of bone, wasters of flint, a sphere of silicious material pecked into shape, slightly oblate on one side, having a diameter of 3 inches. Here and there in the soil, as well as on the surface, were fragments of fresh-water shells.

Eighteen burials, fourteen of adults, four of infants or of older children, were unearthed, none deeper than about 3 feet, some in the dark sand of which the dwelling-site was composed, others on the underlying, yellow, undisturbed sand, and a few let down into it a short distance.

The adult skeletons, the crania of which were found without uniformity of direction, had been buried as follows:

Partly flexed on the right.4
Partly flexed on the left.1
Closely flexed on the right.1
Closely flexed on the left.3
Disturbance.1

Burial No. 1 lay on the right side, the right leg closely flexed while the left leg was only partly so.

Burial No. 4, a skeleton rather closely flexed on the right side in a semi-reclining position against the sloping wall of the grave-pit, the skull being 22 inches from the surface, while the pelvis and lower extremities were at a depth of 40 inches. The right humerus lay along the body, having the forearm flexed to the right shoulder. The left humerus was also parallel to the body, but the forearm was across the trunk. The legs were closely flexed on the thighs.

Burials Nos. 13 and 16, skeletons each having the trunk on the back, the thighs flexed vertically, the legs back against them. Along the outer side of the right humerus of Burial No. 16 were the bones of an infant, the head being in the opposite direction from that of the adult skeleton.

Four skulls, some in poor condition, were saved from this place.

Although the site at Prevatt's Landing is but two miles from the mouth of Duck river, along whose banks such interesting discoveries of artifacts have been reported, not a single object can positively be said to have been found by us with any burial in the Prevatt's Landing site. About 15 inches from a skeleton, and at a somewhat higher level, were two rude, chipped implements of flint—small hoes or hatchets—each about 6 inches in length, placed upright, together.

About one foot above and beyond the feet of Burial No. 13, together, were fourteen flakes of flint, the largest 3 by 2.5 inches, the smallest 1.25 inch by .75 inch. Both this deposit and the one last mentioned may well have been in the midden debris, having no connection with the burials.

MOUND NEAR WEST SHIPP'S LANDING, BENTON COUNTY, TENNESSEE.

About one-half mile above West Shipp's Landing, within a few feet from the river bank, on property belonging to Mr. H. D. Odle, of Camden, Tenn., is a mound quadrangular with rounded corners, having a flat summit-plateau. The basal diameters are 107 feet and 74 feet. The height as measured by us was 6.5 feet, but as the surrounding field is of loamy sand (as is most of the mound) and has been subject to much wash, it was impossible to determine what the original level of the ground had been. Neither sounding-rod nor trial-holes led to the discovery of any interment in this mound.

DWELLING-SITE AT LEADBETTER LANDING, BENTON CO., TENNESSEE.

At Leadbetter Landing, on property of the Ayer and Lord Tie Co., Chicago, Ill., of which Mr. J. B. Lord is president, is a dwelling-site of inconsiderable size, on the bank of the river, the higher part of which is covered by a large storehouse. At the time of the building of this structure skeletal remains were disinterred, the discovery creating considerable local excitement.

Extensive digging was done in the earthen floor of the building, in ground just adjoining it on the outside, and in a continuation of the site in a cultivated field nearby, though there, apparently, burials were widely apart.

In all, eleven skeletons were encountered, seven of adults, four of infants or of older children.

Of the adults, one was extended on the back; two were closely flexed on the right; one, closely flexed on the left; one, partly flexed to the right; one, partly flexed on the left. One had been disturbed in aboriginal times. There had been no attempt at orientation of burials at this place. Five crania were preserved, though some were considerably crushed.

With the skeleton of a child were 151 beads of shell, some discoidal, some almost globular, the largest having a diameter of .65 inch. A skeleton at full length on the back had at the neck beads made from the ocean shell *Marginella*.

Alongside this skeleton, beginning at the pelvis and continuing down, the head directed in the same way as that of the burial near which it was, lay the skeleton of a child at whose neck were beads, some of shell, small and of the ordinary kind, others made from *Marginella*.

MOUNDS OPPOSITE THE MOUTH OF CEDAR CREEK, DECATUR COUNTY, TENNESSEE.

Landing opposite the mouth of Cedar Creek (which is on the other side of the river and in another county) and proceeding about one-half mile westwardly to the first high ground, one reaches, on property of Mr. T. S. Hassell, of Clifton,

Tenn., three mounds, all near together. Two of the mounds are each about 6 feet in height and 40 feet across the base. The third mound is about 2 feet high and 25 feet in diameter. These mounds, which were visited by us, had unfortunately been dug to such an extent before our visit that further investigation of them was considered useless.

DWELLING-SITE NEAR MOUTH OF BEECH CREEK, WAYNE COUNTY, TENNESSEE.

In sight from the union of Beech Creek with the Tennessee, on the northern side of the creek, on property of Mr. J. L. Richardson, who resides there, is a former aboriginal dwelling-site, the surface of which is thickly strewn with midden debris, from which we selected two pestles, several rude hoes of limestone, many cutting implements of chipped flint, most of them rudely made, some arrowheads and knives of flint.

Fragments of human bones lay on many parts of the field, and we were told that bones and artifacts had been plowed up there for more than thirty years—and probably for a still longer period, as the place had been under cultivation for a long time before our informant's experience of it began.

Slabs of stone lying here and there indicated the former presence of stone graves, but as the soil at this place was too tenacious to permit the use of rods to advantage, we were compelled to rely on trial-holes to discover burials of any kind. The following burials were encountered.

Burial No. 1 consisted of bones thrown irregularly together and may have been a disturbance, aboriginal or otherwise. It lay on yellow, undisturbed clay in the rich, dark, loamy clay of the field. With the bones were a few small, discoidal, shell beads in bad condition.

Burial No. 2, just below the surface, was a stone grave from which the plow had taken practically all of the upper part of one end and some of one side. Within the grave, which apparently had been found and rifled in the past, were slabs, and fragments of human bones. At one corner, beneath a slab that still remained in place, were parts of a tibia and a fibula, and foot-bones all in place. The burial evidently had been that of an adult, the head W. by S. Apparently there had been no flooring of slabs for this grave.

Burial No. 3, lying on undisturbed yellow clay, 18 inches down, was a skeleton closely flexed on the left side, the head directed SE. by S.

Burial No. 4, a skeleton partly flexed on the right, the head N., lying in a grave¹ which extended 14 inches into the undisturbed yellow subsoil. The dark loam of the field was 8 inches deep at this place, making the total depth of the burial 22 inches. This skeleton in part rested on the pelvis of Burial No. 5.

Burial No. 5, a skeleton extended on the back, the head directed SSW. The left arm was flexed, with the hand resting on the left shoulder. This burial, which was 2 feet deep, had a flint point, probably a lancehead, resting on the left thigh.

¹ When stone graves are under description the fact will be distinctly specified.

Burial No. 6, a skeleton extended on the back, lying on the yellow clay which was but 6 inches deep at this place. The skull, if present, would have been directed S. by W., but a post or a tree, as indicated by a round hole which extended considerably deeper than the grave, had destroyed the head.

Burial No. 7, the skeleton of a child, just under the surface, had in line beside it seven earthenware vessels, as follows: over part of the skull and covering an upright bowl and a pot was an inverted bowl. In contact with this bowl, on the body of the child, was an inverted bowl having two small bowls, also inverted, side by side against it. In this bowl was a musselshell, somewhat broken, which no doubt had been used as a spoon. Over the pelvis of the skeleton had been placed an inverted bowl.

All this earthenware was shell-tempered and without line or painted decoration. Two of the vessels (all seven dropped to fragments on removal) had knobs below the rims, while one had a small extension, probably meant to represent the beak in a rude shell-form. Between two of the vessels, upright, was a small, slender celt of indurated shale.

Burial No. 8. This skeleton had been closely flexed on the right, the head pointing NE., but had been badly disarranged by Burials Nos. 4 and 5.

Burial No. 9. Just beneath the surface, and somewhat disturbed by the plow, was a tiny stone grave let down into the undisturbed yellow clay. The top of the grave had been plowed away. This grave, not oblong, but with decidedly rounded corners, was constructed with the aid of eight slabs, some triangular, and placed with pointed ends downward. The floor consisted of three slabs, one comparatively small, used to fill an intervening space. The outside measurement of the grave was 21 inches by 14 inches; the inside measurement, 17.5 inches by 10.5 inches. Within the grave were a few decaying bones of an infant, with which were a considerable number of small, barrel-shaped beads of shell.

Burials Nos. 10 and 11 were skeletons of children, one considerably disturbed by the interment of the other. Near one skull were ten barrel-shaped shell beads, each almost one inch in length.

All the burials described here were near together, though it is of course impossible to determine if the stone-grave burials were made at the same period as were those that were unenclosed.

MOUND NEAR OLD FURNACE LANDING, DECATUR COUNTY, TENNESSEE.

At Old Furnace Landing is a property belonging to Mr. W. A. Hassell, of Clifton, Tenn. A barn and other buildings are upon a low mound within sight from the landing. This mound, which is now about 2 feet high and 95 feet in diameter, approximately, has been trodden and trampled to such an extent by mules and horses that it is hard to say what its original dimensions were. We were unable to find any part of this mound where digging would not have been a decided injury to it.

MOUNDS ON SWALLOW BLUFF ISLAND, DECATUR COUNTY, TENNESSEE.

On Swallow Bluff Island, owned by Mr. S. S. Dickey, of Saltillo, Tenn., near the upper end (where principal mounds usually are found on islands in Tennessee river), are two mounds about 150 yards apart, visible from the bank. These mounds, we were informed by Mr. Dickey, had never been under cultivation and but very recently had been cleared from a thick growth of cane. Their appearance also showed no sign of the plow.

The northernmore mound, the one nearer the water, is 18 feet in height, measured from what seemed to be the general level, though, taken from other points where wash has occurred, or near slopes, the height would be considerably greater. The sides are somewhat irregular, there being at the present time a small extension from the northern corner, which, however, is not a graded way, the slope from the extension being as steep as from the rest of the mound. The mound, however, is practically square, with a basal diameter of 130 feet, and its flat top measuring slightly more than 50 feet across. The sides do not all face the cardinal points, nor are its corners directed toward them.

The upper part of this mound consisted of homogeneous, loamy clay in which the limits of graves could not be defined. Numerous trial-holes were sunk and the sounding-rod was freely used in the summit-plateau, resulting in the discovery of twenty burials which will be described in detail.

Burial No. 1. Together, were the pelves, thighs, and legs (the extremities being flexed) of two skeletons, the upper parts missing through some cause we could not determine, no grave having been discovered below them.

Burial No. 2, 3 feet 8 inches down, was the skeleton of a child, having near the head a bottle of yellow, shell-tempered ware, without decoration. At the opposite side of the skull were a rude discoidal of limestone, and a flint chisel 3.25 inches in length by 1 inch in width, having a ground cutting edge at each end. This is the first chipped flint implement with a ground edge met with us by on the Tennessee river. With the chisel was a bone implement crumbling to bits, and a small hone of sandstone.

Burials Nos. 3 and 4. Two feet from the surface was what seemed to be a single stone box-grave, 6 feet 3 inches in length and 2 feet 6 inches wide. The sides of this grave were vertical, and the covering slabs, which were of limestone, as were all the slabs found on this island, lay squarely upon them. Resting on an upper slab at one end was a rude pot, and at what appeared to be near the middle of the grave had been placed a short-necked, undecorated bottle.

On the removal of the covering slabs, what seemed a single grave proved to be two graves with separate ends, a slab placed above the adjacent extremities having covered them. The two graves proved to be not exactly in line, that of Burial No. 3 being ESE. to WNW., while the other was E. and W.

Burial No. 3, the bones of a child, badly disarranged, with the skull at the eastern end of the grave and immediately under the vessel to which reference has

been made, lay in a grave the inside measurements of which were 2 feet 7 inches and 1 foot 6 inches, the depth being 10 inches. Neither in this grave nor in any found on this island was there a flooring of slabs. The symmetrical appearance of this grave, which differed so much from those found in the smaller mound at this place, was due to the fact that the lower parts of the supporting slabs had been imbedded about 5 inches beneath the level of the base of the grave, thus enabling them to remain vertical.

Burial No. 4 lay with the head directed toward the west, the feet in the direction of Burial No. 3. The grave, inside measurement, was 3 feet by 22 inches; its depth, 13 inches. These quarters were so restricted that the skeleton, that of a fair-sized adult, had been accommodated with difficulty. Squarely across the foot of the grave, extending to the right, were the thighs with the legs drawn up against them, at right angles to the trunk which lay upon the back; the skull, which was saved, had been forced forward and turned so that the right side rested on the thorax.

At the right shoulder was a small, undecorated pot having two loop handles. The vessel already referred to as deposited on what seemed to be midway of the single grave, in reality rested over the feet of this burial.

Burial No. 5, a stone grave the top of which was 2 feet 6 inches from the surface of the mound. Although the slabs had been carefully placed to a depth of some inches beneath the base of the grave, they diverged somewhat toward the top of the grave, though the consequent outward slant had not been sufficient to cause the covering slabs to fall or to lose their horizontal position. The outside measurement of the grave was 4 feet 5 inches by 2 feet 10 inches. The top of the grave was made up of a double layer of slabs, the upper ones being comparatively small, while but five had been used for the lower layer, three of which were unimportant and used to cover spaces left by two large slabs, the larger of which was 2 feet 6 inches by 1 foot 10 inches, and 2 inches thick. One entire side of the grave was but a single slab, while the other was a large slab with a small one used to fill a remaining space. The slabs at the ends were single. The inside measurements of the grave were: length, 4 feet; width, 2 feet; depth, 13 inches.

On the floor, which was of earth, was the skeleton of an adult, closely flexed to the right, the head SE.

Burial No. 6, an unenclosed skeleton partly flexed to the left, the head N.

Burial No. 7 was a stone grave, its top nearly 2 feet below the surface. Outside measurements were 4 feet 2 inches by 2 feet 10 inches. The flat top was double in places where small spaces had been left. The sides and ends were of single thickness and their bases extended well into the ground, hence the covering slabs were firmly supported. The inside measurement of this grave was 3 feet 10 inches by 2 feet 4 inches, the depth being 1 foot 3 inches.

The skeleton, rather closely flexed to the right, the head S. by E., had the right forearm diagonally over the trunk and the left forearm across it, the humeri being parallel with the trunk. At the neck were a few small, discoidal beads of

shell, and at the feet were several badly-decayed, piercing implements of bone, close together.

Burial No. 8, a stone box-grave 2.5 feet from its top to the surface, oblong, 3 feet 9 inches by 2 feet 1 inch, a single slab at each side and at each end, the covering being a double thickness of slabs in places, smaller ones having been arranged



FIG. 12.—Burial No. 8. Stone box-grave, 3 feet 9 inches by 2 feet 1 inch. Swallow Bluff Island, Tenn.

over gaps between parts of the larger, under ones. In this grave the covering slabs presumably had been held up in part by supports, perhaps of wood, and had not been placed squarely across the grave. Consequently, when these supports had decayed, some of the covering slabs had fallen to a slanting position, as shown in the photographic reproduction (Fig. 12).

This grave, 3 feet 3 inches long by 1 foot 8 inches wide, inside measurement, contained a skeleton, partly flexed, the trunk on the back, the knees drawn up

into the corner of the grave, the left arm and forearm extended along the body, as was the right upper-arm whose related forearm crossed the trunk. The head was directed NNW. The grave containing this skeleton is shown in Fig. 13, the covering and one side of it having been removed.

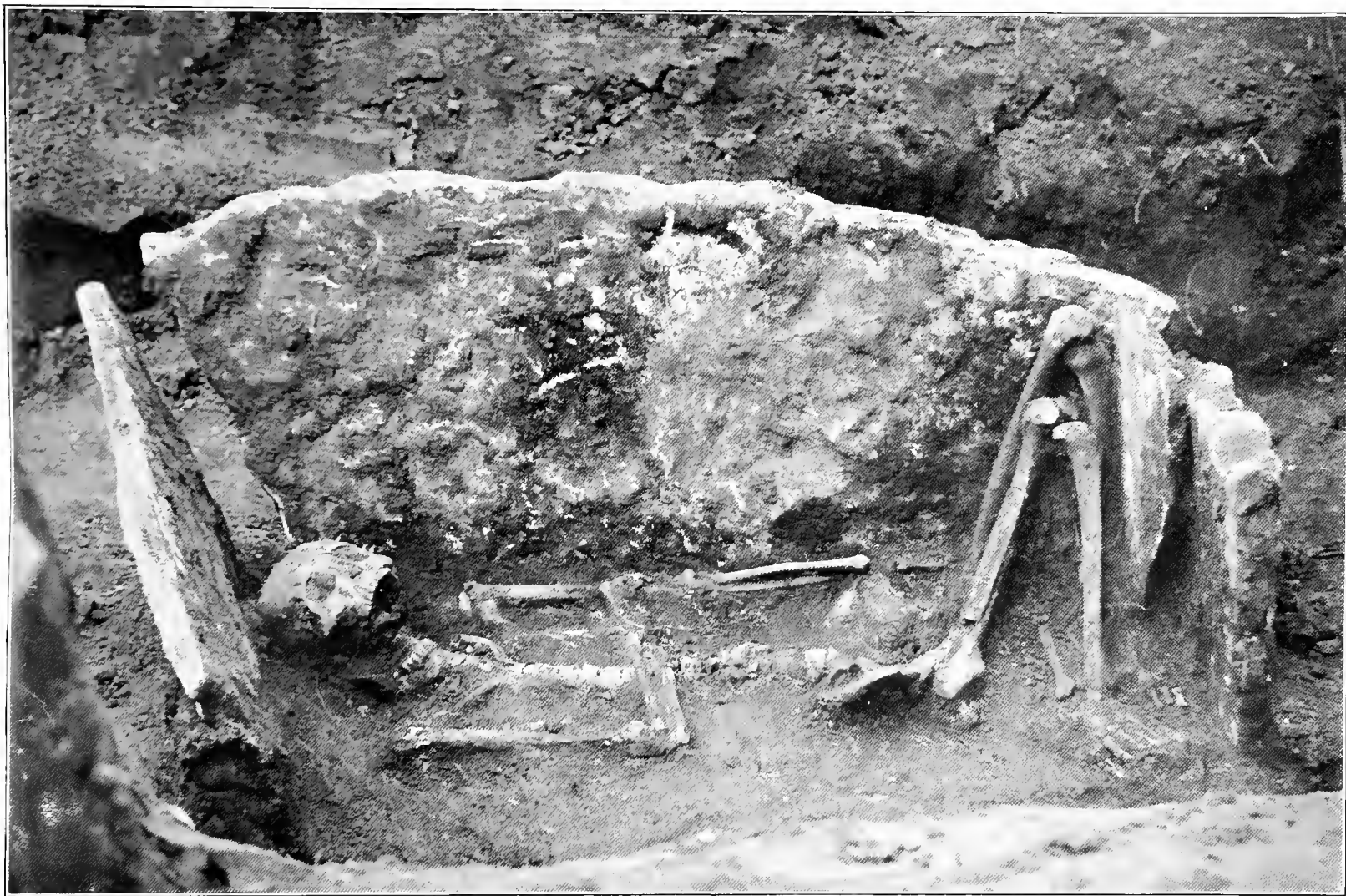


FIG. 13.—Burial No. 8, showing skeleton, part of the grave having been removed. Swallow Bluff Island, Tenn.

Burial No. 9, a stone grave whose sides formed a rude pentagon supporting a covering consisting of one large slab on which here and there had been placed smaller slabs, in some cases in one thickness or again in two thicknesses, the whole arrangement having an elliptical outline (Fig. 14). This stone grave, 2 feet 1 inch in length and 1 foot 4 inches in maximum width, had a height of 1 foot 2 inches, excluding its lower parts which entered the ground. (It is impossible in

the case of stone graves exactly to determine the height, outside measurement, since the depth to which the various slabs penetrate the ground is irregular and not determinable until the grave is demolished. In the case of inside measurement, of course, one has the floor from which to determine the height.) Seven inches below the top was the skeleton of an infant, whose bones, though not well



FIG. 14.—Burial No. 9. Stone box-grave of an infant, 2 feet 1 inch by 1 foot 4 inches, over all. Swallow Bluff Island, Tenn.

preserved, were in better condition than one would expect them to be, and this applied to all skeletons of infants and of children found at this place. Presumably lime from the slabs above them had acted as a preservative.

Burial No. 10. The supporting slabs of this stone grave had not been firmly set, and having assumed an outward slant, had permitted the covering slabs to fall into the grave, which under these conditions, was 5 feet 7 inches long by 2 feet 7 inches wide, its top being just below the surface. This grave, which was in contact with Burial No. 12, at right angles to it, contained a skeleton closely flexed on the right, having a fragment of a thick cooking pot of earthenware,

about the size of a man's hand, as a mortuary tribute. Presumably, the aborigines, who made a deposit of this kind in another instance at this place, considered the gift as at all events better than nothing, an opinion, however, with which the investigator of stone graves is not likely to agree.

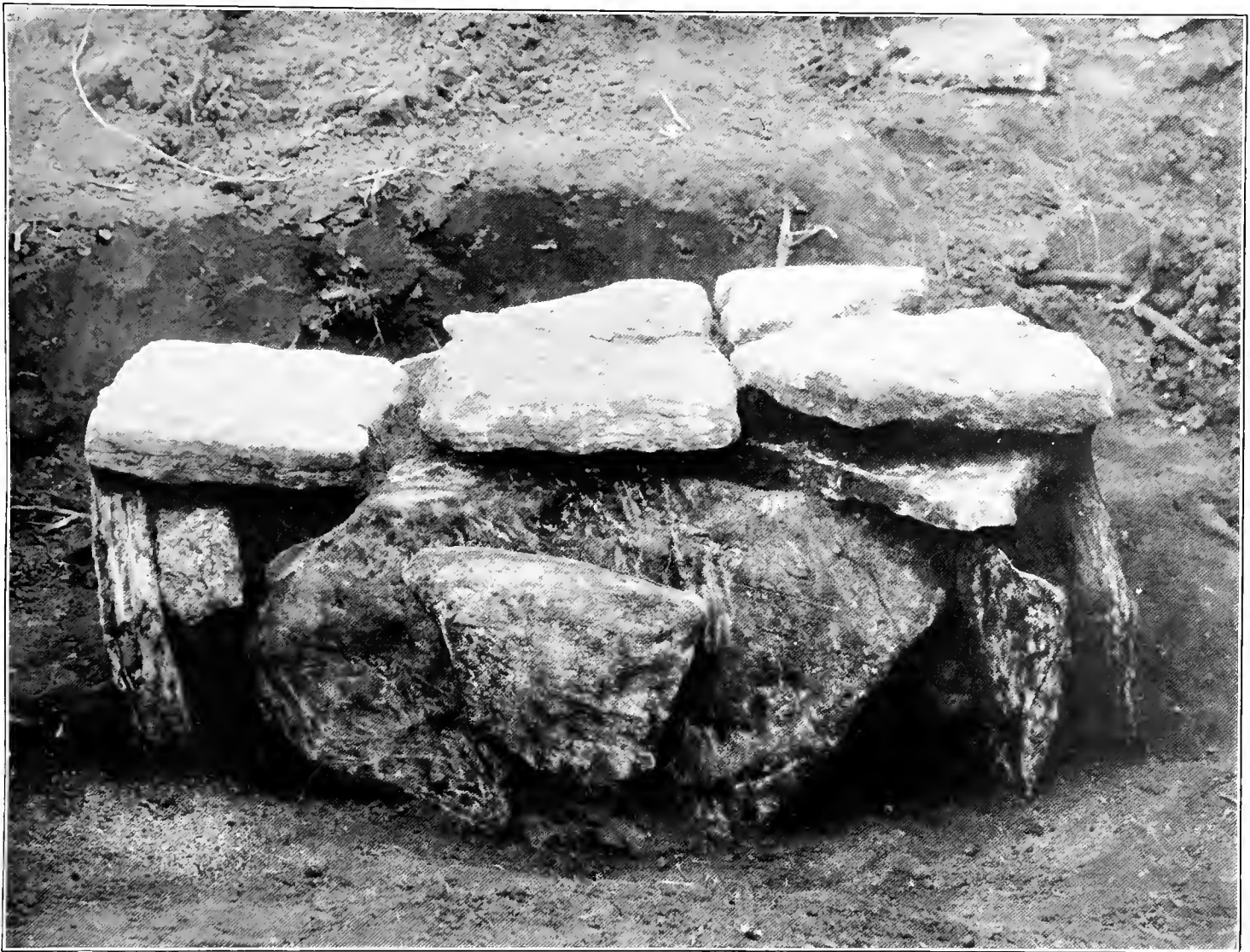


FIG. 15.—Burial No. 12. A stone box-grave, 3 feet 8 inches by 2 feet 5 inches, over all. Swallow Bluff Island, Tenn.

Burial No. 11. This grave, 1 foot 2 inches from the surface, was not a box-grave, like the rest, but a mere arrangement of slabs in one thickness, 3 feet 4 inches long by 2 feet 2 inches wide, placed over the bones of a child, which lay 4 inches below.

Burial No. 12, a few inches from the surface, was a fine example of the stone

box-grave, the sides and ends upright, the covering slabs resting squarely on them. This grave, oblong, 3 feet 8 inches by 2 feet 5 inches, had the sides and ends of single slabs, except at one point where there were two slabs. Surrounding the grave small gaps had been filled with slabs of inconsiderable size; other unimportant spaces had been left uncovered. The top was composed of three large slabs forming a single layer, the one at the lower end of the grave, however, having another slab upon it, forming a double layer at this place (Fig. 15).



FIG. 16.—Burial No. 12, showing the skeleton, part of the grave having been removed. Swallow Bluff Island, Tenn.

The inside measurements of this grave were 3 feet 3 inches by 1 foot 8 inches. Its depth was 1 foot 1 inch. The considerable difference in width between the inside and the outside measurements (the latter taken over all), is accounted for by the projecting ends of the covering slabs.

In the grave, partly flexed to the right, as shown in Fig. 16, representing the grave after removal of certain slabs, was a skeleton, the head directed E. by N.

Burial No. 13, a stone grave, the sides and ends forming an oblong and having a covering oval in outline made up chiefly of one great slab, diamond shaped, its four corners resting on the central parts of the sides and the ends of the grave

(which had been evenly dressed to afford a level support), leaving four corners of the top of the grave uncovered. These corners, however, had been carefully overlaid in double and treble thickness with small slabs whose rounded outlines, projecting over the corners in places, formed the oval outline of the entire cover-

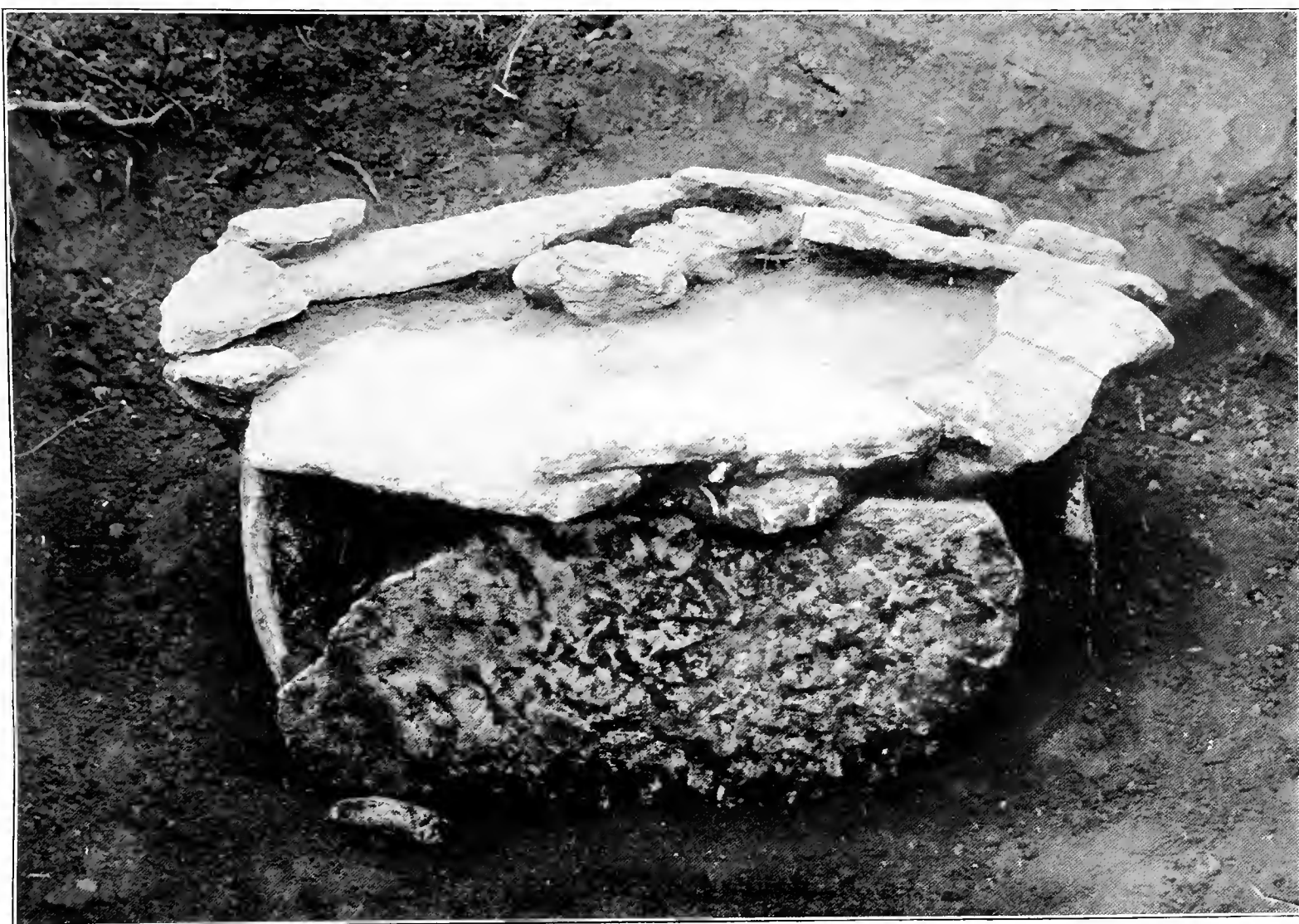


FIG. 17.—Burial No. 13. Stone box-grave, 3.5 feet by 2.5 feet, over all. Swallow Bluff Island, Tenn.

ing, as shown in Fig. 17. The entire grave, which was 2 feet from the surface, measured 3.5 feet by 2.5 feet over all.

On the bottom of the grave, whose inside measurements were 2 feet 8 inches by 1 foot 5 inches and 1 foot 4 inches deep, was a skeleton of a young woman, the trunk on the back, the knees closely flexed toward the left and resting against the side of the grave, the bottom of which the trunk completely filled, as shown in the

illustration (Fig. 18). The head, which would have been directed S., owing to lack of space had been pushed over on the chest.

Burial No. 14, a carefully-made cist, its top 3.5 feet below the surface, 4 feet by 3 feet 1 inch in size. The sides consisted of single slabs, double slabs being at the head of the grave while the foot was made up of one slab of fair size, a small



FIG. 18.—Burial No. 13, showing skeleton, some of the slabs having been removed from the grave. Swallow Bluff Island, Tenn.

one filling a space at a corner. The covering, which was level, was made up of three large slabs, resting on which were four smaller ones covering open places.

The grave, 3.5 feet by 2.5 feet and 1 foot 2 inches deep, inside measurement, contained a skeleton partly flexed on the right, the head directed S. The skull of this burial was saved.

Burial No. 15, unenclosed, 3 feet 9 inches deep, closely flexed to the right, the head SSE.

Burial No. 16, unenclosed, 13 inches below the surface, partly flexed to the right, the head SSE. At the left of the skull was a pot having two loop handles, and at the right another with loop handles and an encircling row of knobs around the body. At the right shoulder was the shell of a tortoise or of a turtle, with which no pebbles were found. At the outer side of the right humerus was a vessel having two loop handles and a rude, incised decoration. All these vessels were small, more fitted for interment with a child than with an adult, and were of the most inferior quality of ware.

Burial No. 17, two feet four inches down, the bones of a young child, unenclosed.

Burial No. 18, a stone grave slightly more than 3 feet in length and 16 inches in width, about .5 foot below the surface, the sides and ends composed of upright slabs in single thickness, a space 10 inches in width unfilled at one side. The top, perfectly flat, was made up of two slabs and a fragment to cover the space where they failed to meet. There was a small opening, however, uncovered at one corner.

This grave, interiorly 34 inches by 13 inches and 9 inches deep, was irregularly oblong, being somewhat wider at the foot than at the opposite end, owing to the greater size of a covering slab. It contained an infant's skeleton, the head S. by E.

Burial No. 19, a few feet from Burial No. 18 and at the same depth, but at a right angle to it, was a grave 28 inches by 20 inches. This grave was not a complete enclosure, spaces being at one of the sides, though the top was almost entirely covered. At the bottom of the grave, whose inside measurements were 2 feet by 17 inches by 1 foot in depth, were the bones of an infant, the head directed E.

Burial No. 20, a grave having the sides pentagonal, the top roughly oval, made up of two slabs having upon them three small ones covering spaces. This grave, 23 inches by 17 inches, is shown in Fig. 19.

The inside measurements of this little stone grave were: length, 18 inches; width, 13 inches; depth, 9 inches. Within it lay the skeleton of an infant which, notwithstanding its diminutive size, had the legs flexed, a necessity imposed by the restricted quarters. One end of the grave, not as wide as the opposite end, was formed of two slabs meeting at an angle and contained the lower part of the skeleton.

A curious feature connected with this mound, which was plainly a domiciliary one, having burials in its summit-plateau (which, as we know, is sometimes the case with this class of mounds), was that no burials were encountered in the central part of the plateau, all being marginal, and especially numerous at the four corners. Did we not know the aborigines sometimes buried under their dwellings, we might feel assured the center of the plateau had been the site of a wigwam and that burials had been made round it, and such, in this particular instance, may have been the case.

The smaller mound on Swallow Bluff Island, measured from the northern side on the general level of the field, is 9 feet 6 inches in height. It is about square, with a diameter of 90 feet; the summit-plateau is about 30 feet across. The sides and corners of the mound exhibit no orientation evidencing a purpose.



FIG. 19.—Burial No. 20. Stone box-grave of an infant, 23 inches by 17 inches, over all. Swallow Bluff Island, Tenn.

As the soil of the summit-plateau did not lend itself to the use of the sounding-rod, recourse was had to trial-holes, which were put down throughout almost all the available space on the plateau. At a depth of somewhat more than 4 feet through dark clay with some admixture of loam, hard yellow material was reached which was not indicative of the presence of graves.

The following burials were encountered in the dark layer above the yellow.

Burial No. 1. Sixteen inches from the surface was a symmetrical, elliptical fireplace 14 inches by 16 inches and about 5 inches deep, having the sides, which were not sloping, but vertical, burnt red, and the base hardened by fire but containing no ashes or charcoal.

Near this fireplace, but perhaps having no connection with it, was a stone grave consisting of limestone slabs arranged in a single thickness on another fireplace, the hardened clay of which served as a floor for the grave, but as the

grave cut through still another fireplace, it is possible that the position of this one may have been accidental and that all these fireplaces belonged to the dark midden layer and not to the graves.

The slabs of this grave were not let into the soil below the level of the floor, but seemed to have been simply placed on edge on the floor of the excavation and apparently had bulged out after the completion of the grave. At all events four slabs covering the grave, a large one and three small ones, had fallen in between the slabs constituting the sides. The upper margin of the side slabs, moreover, was very irregular and could have afforded but little support to the covering slabs.

The grave, outside measurement, was 4 feet in length and about 2 feet wide at the central part. Its depth, estimated from the top of the side slabs, was 1 foot 5 inches. It was not oblong, but converging and rounded at the end where the skull rested.

On the fireplace which served as a floor, was the skeleton of an adult, the head directed E. The trunk lay on the back, the head pushed forward on the chest. The thighs were partly drawn up to the right, with the legs flexed against them. The right arm lay along the body, as did the left humerus, but the left forearm lay across the trunk. There was no room to spare within the grave, the skeleton being in contact with the slabs at the head and foot, and at the foot of the grave some effort had been necessary to accommodate the bones, the width of the grave not having been sufficient, originally, to receive the thighs and pelvis if placed horizontally on the floor. In consequence, the thighs were angled against one side of the grave.

In the grave with the skeleton no artifacts were found, but on the upper side of one of the top slabs that had fallen in was an undecorated bowl which fell into bits on removal. Seemingly this bowl had been placed on the grave after the arrangement of the slabs and before the earth was filled in.

Burial No. 2, traces of a skeleton of an adult, about 3 feet down, extended on the back, the head directed S.

Burial No. 3, remains of the skeleton of a grown person, which had been flexed to the left, the head S.

Burial No. 4, crowns of the teeth of a child. This burial, as well as the preceding one, was 20 inches deep.

Burial No. 5, a stone grave. From the surface of the mound to the top of the grave the distance was 2.5 feet. Above the grave were scattered human bones indicating that another burial had been disturbed in the making of the stone grave.

The supporting slabs of this grave, in single thickness, had been arranged in a manner similar to those described in connection with Burial No. 1 in this mound, and consequently they slanted outward to a considerable extent, with the exception of the slab at the foot of the grave only, which remained vertical. Hence, the covering slabs had fallen in, some resting squarely on the bones which they

had crushed, others with one edge down and the opposite side still remaining on the supporting slabs. The top slabs had been irregularly placed, overlapping, some in double thickness, some three deep.

This grave, somewhat larger than it had been originally, no doubt, owing to the outward slant of the supporting slabs, was 6 feet 10 inches in length and 3 feet 4 inches in width. On the bottom of the grave, which was without slabs, was a skeleton extended at full length on the back, the head directed ENE. The grave, inside measurement, was 5 feet 9 inches in length and slightly more than 2 feet in width; its depth, one foot. The astragalus and the scaphoid of the right foot lay half-way to the knee, though the other foot-bones and the bones of the left foot were in place.

Artifacts with this burial were not of a gratifying kind. At the right of the skull, concave side up, was a sherd, 10 inches by 7 inches, which had formed part of a large cooking vessel. At the outer side of the left knee had been an upright vessel with encircling knobs below the rim, now decaying and broken.

Burial No. 6. This burial, that of a young child, lay about 2 feet down protected by a single slab of stone which lay over it diagonally. Presumably the body had been placed in the bottom of the excavation and the slab had been arranged above it, the upper part leaning against the side of the grave. Two small fragments of stone near the skeleton may have had some connection with the burial, perhaps may have fallen from the protecting slab.

MOUND AT OLD CALLENS' LANDING, HARDIN COUNTY, TENNESSEE.

At Old Callens' Landing (the present landing being somewhat farther up the river), immediately on the river's bank and apparently having suffered to some extent from wash on the side nearest the water, is a mound having a flat top with numerous trees upon it. This mound, 8 feet 6 inches in height, is on the property of Messrs. Callens Brothers, of Cerro Gordo, Tenn. The diameter of the base parallel to the river is 106 feet. The present width of the base is 56 feet. The sides do not face the cardinal points.

The mound, of clay with some admixture of loam in the upper parts, was not sufficiently soft for the use of the rod. The summit-plateau was tested with trial-holes in all directions, but without success.

MOUND NEAR DICKEY'S LANDING, HARDIN COUNTY, TENNESSEE.

On the estate of Mr. J. S. Dickey, whose home is upon it, is a mound having a flat top which, as well as the sides, evidently has been plowed over for a long time, as the mound has no regular outline. It is situated in a cultivated field about one-half mile NE. from Dickey's Landing. Its height is 11 feet; its diameters of base, 145 feet and 95 feet. Neither it nor the surrounding area has any history of discoveries of artifacts or bones, though, of course, before the time of the present generation, aboriginal graves may have been discovered there.

This mound, which was of sandy loam in the upper two-thirds, lent itself to the use of sounding-rods, and in consequence was prodded in all parts by us. In addition, numerous trial-holes were put down, but nothing of interest was encountered.

MOUNDS ON THE WILLIAMS PLACE, HARDIN COUNTY, TENNESSEE.

The Williams Place, two miles below Savannah, Tenn., on the same side of the river, is described in the Smithsonian Report for 1870 (p. 416 *et seq.*) as having a number of mounds which were investigated by the agent of the Smithsonian Institution. Results are detailed that show the lack of success which is likely to follow mound exploration along Tennessee river.

We did not attempt further investigation at this place, having learned that some of the mounds there had been plowed away since the investigation referred to and that no discoveries had been made during the cultivation of the property.

MOUNDS AT SAVANNAH, HARDIN COUNTY, TENNESSEE.

This aboriginal site, originally of importance, was surveyed and investigated for the Smithsonian Institution, the results being detailed in the Smithsonian Report for 1870 (p. 408 *et seq.*), and in the Twelfth Annual Report of the Bureau of American Ethnology (p. 578). Since the visit of Mr. J. Parish Stelle, who conducted the investigation, the mounds of the group have been destroyed wholly or in part owing to their presence within the limits of the town. No further investigation was considered by us to be feasible or desirable.

MOUNDS OPPOSITE WOLF ISLAND, HARDIN COUNTY, TENNESSEE.

On the right-hand side of the river, going up, opposite the lower end of Wolf Island, on property controlled by Mr. J. F. Williams, of Crump, Tenn., are two mounds about 150 feet apart, near the river bank and in full view from it.

The larger mound, which has a flat top and probably has been quadrangular, is said to have had a house upon it. Its shape at present is somewhat irregular. Several small holes, no doubt unambitious efforts of treasure-seekers, were in the summit-plateau. The height is 12 feet; the diameters, 115 feet and 165 feet. We were unable, by systematic prodding and by trial-holes, to get any trace of burials in the superficial part of this mound.

The smaller mound, very symmetrical, about circular as to the base, which had a diameter of 50 feet, almost without summit-plateau, was on the end of a ridge about 2 feet above the general level, which gave the mound the appearance, from one side, of having a height of about 7 feet; but this in reality, was not the case, the base of the mound being on the upper surface of the ridge, as was shown by a central hole 8 feet by 10 feet sunk by us to the undisturbed soil and into it.

The mound had been made of clay on top to a depth of about 1.5 foot when sand having a slight admixture of clay continued 3.5 feet to the bottom of the mound.

Traces of four burials were come upon, three resting on the sand and covered by the upper layer of clay, and one (Burial No. 4) completely in the sand, 40 inches from the surface.

Burial No. 1 consisted of traces of bone and two crowns of teeth. Burial No. 2 was remains of the skeleton of an adult, which had been flexed to the right, the head SSW. Burial No. 3 showed only indications of bone; no teeth or trace of the skull were recovered.

Burial No. 4, fragments of the skeleton of an adult, which had been partly flexed to the left, the head SE. At the left shoulder was a small, undecorated pot of very inferior ware, which had possessed two loop handles, one of which was missing. At the right of the skull was a small bowl on edge, somewhat broken, undecorated save for a rude effigy of the head of a bird rising from the rim on one side, and a conventional tail extending horizontally on the other side.

MOUNDS NEAR PERKINS BLUFF, HARDIN COUNTY, TENNESSEE.

Immediately back of the landing at Perkins Bluff is high ground, property of Mr. G. L. Perkins, of Crump, Tenn., the fields on which have in places small deposits of midden debris. In light woods bordering the fields are a number of small mounds from a few inches to 4 feet in height and from 15 to 35 feet in diameter.

The largest of these mounds, evidently very symmetrical originally, had been dug out thoroughly as to its central portion prior to our visit, and human bones lay at the border of the hole. We were told that a shell on which were "letters" (a gorget, if anything) had been found with the skull of a skeleton lying on the bottom of the mound. Four equidistant trenches, each about 3 feet wide, were put in by us from the margin of the mound along its base to where the previous digging had been, through raw clay in three instances, the fourth trench in clay and gravel. Our efforts were without success.

Nine other mounds, including one in a cultivated field, some of which had been previously dug into, were carefully investigated by us. In one, but a few inches in height and about 15 feet across, was a skeleton 7 inches down, partly flexed on the right, the head NW. The skeleton lay on raw, undisturbed clay in dark, loamy soil containing some midden refuse.

In another mound in which some digging had been done, part of a human left femur lay at the edge of the hole.

A number of other mounds at this place, similar outwardly to those described by us, and probably inwardly also, were left uninvestigated.

MOUND NEAR PITTSBURG FERRY, HARDIN COUNTY, TENNESSEE.

About 300 yards NNE. from the landing at Pittsburg Ferry, which is opposite Pittsburg Landing, in a cultivated field belonging to F. C. Williams, D.D.S., of Savannah, Tenn., is a mound that evidently has been under cultivation for a considerable time, and whose dimensions may have differed greatly from those

noted at the time of our visit, which were: height, 4.5 feet; diameter of circular base, 80 feet.

The mound, of material mainly clay dark in color, was riddled with exploratory holes by us except in the outer parts where preliminary digging indicated no burials were to be found.

In addition, a hole 10 feet by 9 feet was sunk centrally in the summit to a depth of 6 feet, with four smaller excavations from its base, each about 18 inches in depth. Five feet 6 inches down a base line seemed to be reached, but this was not decisive, clay of much the same color as the mound continuing as far as the digging went, and a fragment of worked flint coming from the greatest depth. Presumably the mound had been built on the made-ground of the dwelling-site.

Immediately below the surface scattered fragments of human bones were found, evidently indicating disturbances by the plow. With one of these disturbed burials had been three vessels of earthenware, undecorated and commonplace in form, whose fragments were mixed with the bones.

Five burials in all were encountered, none deeper than 2 feet, two of which had cut through fireplaces in the mound.

Burial No. 1, a skeleton extended on the back, the head E. Lying transversely on the thorax was a graceful celt of slate, 5.3 inches in length. At the right shoulder was a small, undecorated bottle having a globular body with an angular base. Near the skull was a small bowl with a rude animal head on one side and a conventional tail on the opposite side.

Burials Nos. 2 and 3 were each partly flexed to the right, the head to the E. Over the feet of one was a mixture of bones of another skeleton, including the skull.

Burial No. 4 lay extended on the back, the head directed E. by N. At the skull was a small, undecorated pot having two loop handles, and a large fragment of a coarse cooking vessel lay on the trunk. An asymmetrical bottle of yellow ware, undecorated, having a neck in the form of a truncated cone, was at the right shoulder.

Burial No. 5, a mixture of bones 15 inches down, seemed rather too deep to have been a disturbance through cultivation, and may have been an aboriginal one. All the bones in this mound were badly decayed and fell to pieces on removal.

In a nearby dwelling-site holes came upon a skeleton extended on the back, the skull, plowed away in all likelihood, being absent. Its direction would have been E. by N.—easterly like those in the mound. Part of the skull of a child also was found just below the surface.

MOUNDS NEAR PITTSBURG LANDING, HARDIN COUNTY, TENNESSEE.

At Pittsburg Landing, immediately overlooking the river, is the United States National Cemetery where lie many of those killed on the Union side in

the engagement at Pittsburg Landing and at the Battle of Shiloh, which took place on the high ground around the landing, in the Civil War between the States.

The Federal government also has created and maintains the Shiloh National Military Park, where the Battle of Shiloh was fought, and in this park, near the

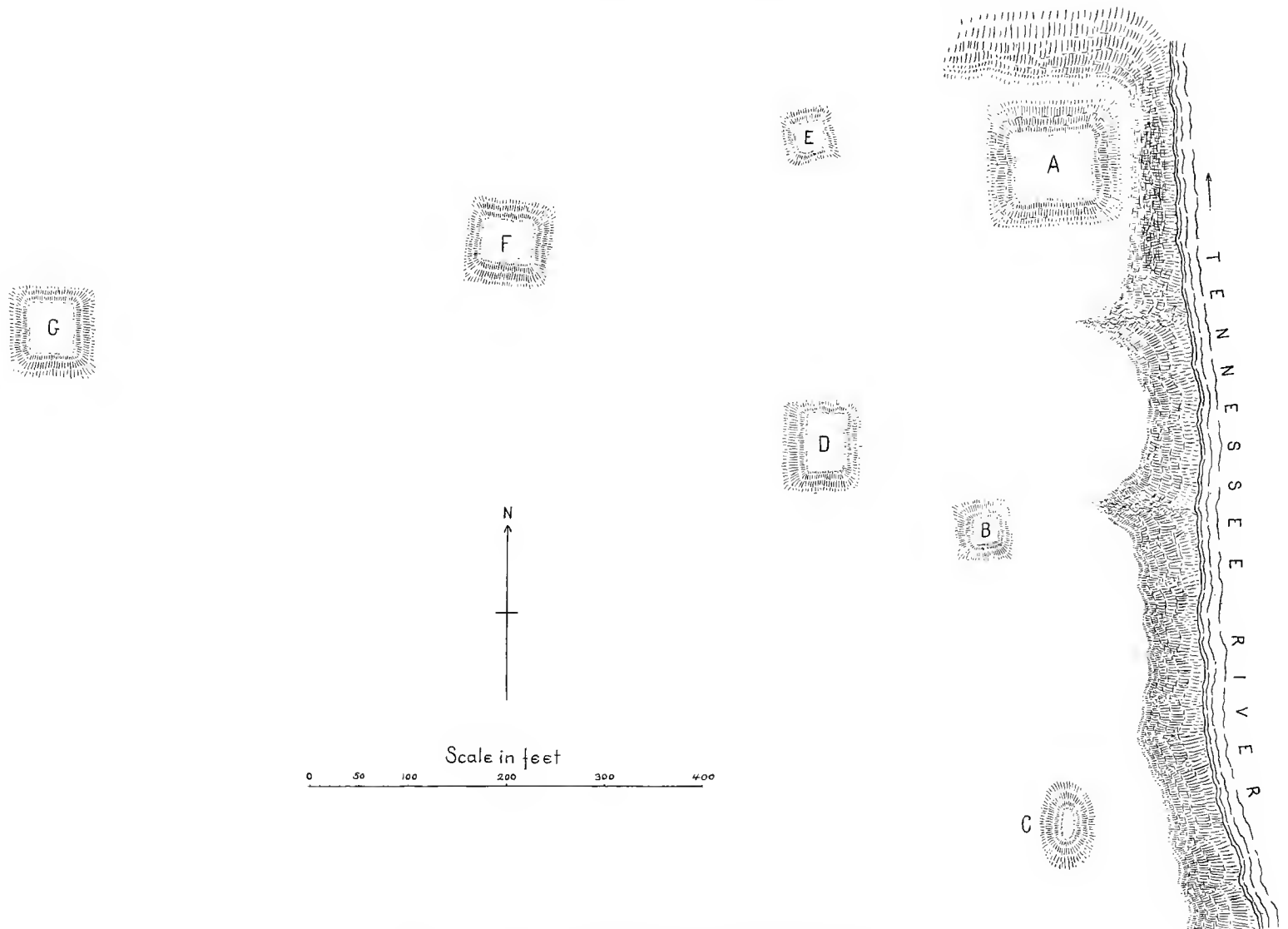


FIG. 20.—Plan of mounds on Shiloh Battlefield, Tenn.

river, is a group of seven beautiful, symmetrical, aboriginal mounds, a plan of which, made by Dr. M. G. Miller at the time of our visit, is shown in Fig. 20, and various low humps and knolls of aboriginal origin, one of which, comparatively low and of very irregular outline, is sometimes described as an eighth mound belonging to the group.

Immediately on the bank of the river is a superb mound (A) with steep sides, on which a house has been built for the use of the superintendent of the park.

This mound, as are five of the others, is square or nearly square, with a flat summit-plateau, the sides approximately facing the cardinal points. The heights of the mounds are as follows:

Mound <i>A</i> —14 feet 6 inches.	Mound <i>E</i> — 5 feet 1 inch.
Mound <i>B</i> — 8 feet 6 inches.	Mound <i>F</i> — 9 feet 3 inches.
Mound <i>C</i> —10 feet 2 inches.	Mound <i>G</i> —11 feet 6 inches.
Mound <i>D</i> — 9 feet 10 inches.	

Permission to dig into these mounds is at present unobtainable, though most of them have been investigated, apparently to a very limited extent, with one exception (Mound *C*) to be referred to in due course. The humps, however, have been dug considerably, owing, perhaps, to their convenient size. Under the summit-plateau of Mound *G* were buried the dead of the Twenty-eighth Illinois Infantry, prior to their removal to the National Cemetery nearby. The traces of the burial trenches in this mound might be mistaken for vestiges of former investigation were not the facts a matter of history.

Mound *C*, elliptical in outline, was dug into in 1899 and a most remarkable pipe was discovered in it. An excellent account of the work, by Col. Cornelius Cadle, who conducted it, is given in *Records of the Past* (July, 1902, p. 218 *et seq.*), the height of the mound as stated by him, namely, 10 feet 2 inches, exactly tallying with our measurement.¹

Colonel Cadle, in the selection of this particular mound for investigation, evinced excellent judgment or enjoyed great good fortune, since all other mounds of the group, being square of base and flat of top, presumably were domiciliary and most likely contained no burials. We quote from the account:

“Continuing the work we reached the center, driving about 2 feet further. This cut, commencing at the surface, was driven at a slight angle upward for drainage in case of rain, and because I expected to make a ‘find’ on the original surface and at the center. For a space of about 4 by 5 feet in the center, 8 inches above the original surface (the surface of the cut), the ground, upon striking it with the handle of a shovel, sounded hollow. Going back toward the entrance, 1 foot from the resounding area, a hole was dug 2 feet deep and across the cut, and with knife and fingers the earth slowly taken away, toward the supposed ‘hollow.’ We were rewarded in an hour or two by finding, first, that this ‘hollow’ area had been covered with large logs. Carefully removing this wood, which was decayed, we found the remains of three bodies, the crania, the vertebræ, the arm and leg bones; apparently laid upon the surface of the ground before the mound was started, either in a sitting position; or possibly the bones had been brought there for reinterment, and the burial place had been timbered so as to form a cell or room, but the wood in decaying had caused a cave-in, filling up the room.

¹ The account, however, is in error in two particulars, namely, in stating that the mounds are oval as to the bases with one exception (that marked *A* on our plan), and in assigning to this mound a height of 25 feet, which altitude, as we have said in the introduction to this report, would require a part of the river bank on which the mound is, to complete.



FIG. 21.—Effigy-pipe found by Colonel Cadle, in a mound on Shiloh Battlefield. (Full size.)
(Greatly enlarged from a photograph in Records of the Past.)

. . . About the center of this burial space we struck something that looked like an arm in stone. For two hours we carefully excavated and dug, not daring to use any implement but our knives and fingers, and were rewarded by finding a pipe in human form, bent on one knee, the bowl and place for the mouth-piece in the back. It is about 10 inches high, carved apparently from either 'Cat-linite,' the 'red-pipe stone of Minnesota,' or a similar stone. It is the most perfect piece of prehistoric carving that I have seen, much superior in artistic work to anything of the kind described and illustrated in Force, Short, Bancroft, Thruston and others, or that I have seen in various collections."

This remarkable pipe, which, enlarged from an illustration taken from Records of the Past, is shown in Fig. 21, to which Colonel Cadle does no more than simple justice, is now in the office of the superintendent of Shiloh National Military Park at Pittsburg Landing, where it is exposed to fire, theft, and breakage. Its place is in the National Museum at Washington.

MOUND NEAR NASH LANDING, HARDIN COUNTY, TENNESSEE.

About half a mile above Nash Landing, in an open field, on property of Mr. O. C. Hagy, of Selmer, Tenn., is a mound reported by our agent, who estimated its height at 10 feet, to have been very badly dug away; hence the mound was not visited by us.

MOUNDS BELOW NORTH CAROLINA LANDING, HARDIN COUNTY, TENNESSEE.

In a cultivated field about one mile in a westerly direction from North Carolina Landing, on property belonging to Mr. John T. Morris, living somewhat farther back from the river, are two mounds about 60 yards apart.

The larger mound has long been under cultivation and the furrows of the field in which it is are carried continuously over it in plowing, so that on two sides its slope has become very gradual. On a third side it has been in part cut away by a road. Its present height is about 7 feet; its diameters, about 100 feet and 150 feet, approximately. The mound, which no doubt has been quadrangular, with flat top,—a domiciliary mound,—is of raw, yellow clay and yielded no sign of burial.

The smaller mound, about 3 feet in height and 50 feet across its irregular base, has been plowed around—and probably over, though not under cultivation at the time of our visit—and has been mutilated by a roadway. This mound was carefully dug into in a number of places, though its composition, raw, yellow clay from the beginning, gave little hope of success. A base-line was reached at a depth of 3 feet 7 inches, but some of the holes were carried somewhat farther. With the exception of a broken piercing implement of bone, no sign of man's handiwork or of human remains was encountered.

From the surface at this place was picked up an arrowhead of gray flint, 1.9 inch in length, .8 inch in width, and having a maximum thickness of only .15 inch.

MOUND NEAR NORTH CAROLINA LANDING, HARDIN COUNTY, TENNESSEE.

On property of Mr. H. B. McGee, living somewhat back from the river, is a mound in a cultivated field, about one-half mile SW. from North Carolina Landing. The mound is without corners, the sides slope gently, and the top is convex. It is impossible to say what shape the elevation may have had, as it has been incorporated in the field, all the cultivation of which is shared by the mound. Its length is 90 feet; its width, 55 feet. Its height, as taken by us, was somewhat more than 5 feet, but it became evident in the course of the digging that the debris of the dwelling-site, which the surrounding field had been, had accumulated around the mound, thus impairing its original height.



FIG. 22.—Bottle of earthenware. North Carolina Landing, Tenn. (Height 8.7 inches.)

Centrally a hole 8 feet by 10 feet was sunk and the height of the mound from the original surface was determined as 7 feet. Remains of two post-holes were found in the digging, and of several fireplaces at different depths, one having had the outline of a basin.

Though parts of a human skull and several teeth were on the surface of the mound at the time of our visit, no bones or artifacts were encountered in the

central excavation, though one of two smaller holes, which were made on each side of the main excavation, came upon two bottles near together, about 1.5 foot below the surface, having, however, no human remains in association. One of the bottles (Fig. 22), with a slender neck expanding toward the mouth, had been covered with red pigment, much of which had disappeared. The ware is fairly good, and, in conjunction with the grace of its form, seemed to promise earthenware of more artistic design and manufacture than we had so far found on Tennessee river. The other bottle, with a broad neck, is undecorated and of inferior ware.

Mr. McGee, the owner of the property, informed us that recently a stone grave had been plowed up near the mound, and our digging in the surrounding field came upon a slab of limestone a few inches below the surface, near which was part of a human humerus. Presumably a stone grave had formerly been at this place.

About one-half mile westerly from the mound is a field about eleven acres in extent, so thickly covered with fragments of flint-wasters, flakes, chippings, and parts of pointed and edged implements—that one could not walk without covering a number of them at each step. But little in the way of fragments of pottery could be seen, and complete points or other implements were rare. Mr. McGee informed us that in the past many arrow- and spear-points had lain on the surface, but these had been broken by the plow or carried away. We heard from another source that persons living nearby had searched the field for implements and that an employe on a fleet of dredgeboats which had been quartered on the river nearby had acted as a collector for a dealer in antiquities.

A number of trial-holes were put down in a small rise in the field, one of which came upon a slab of limestone 8 inches from the surface, beneath which were the bones of the upper extremities and the upper part of the thorax of a human skeleton—no doubt the remainder of a stone grave.

There were also found remains of a skeleton, unenclosed, so badly decayed that the form of burial could not be determined, and two skeletons in very poor condition, both extended on the back, one heading SE., the other ESE.

Apart from bones were found a sheet of mica about 6 inches by 5 inches, and a slab of limestone, no doubt having belonged to a stone grave.

There can be little doubt that stone graves were at this place in the past, but whether of the box-grave variety or not, we are unable to say.

DWELLING-SITE NEAR PICKWICK LANDING, HARDIN COUNTY, TENNESSEE.

On property of Mr. T. J. Fields is what is generally supposed to be a mound, about one mile SE. of Pickwick Landing, on the right-hand side of the river, going up. Careful examination based upon digging showed this elevation, which is about 11 feet high and 82 feet by 110 feet in basal diameters to be a natural formation.

In the neighborhood of this elevation has been an extensive, aboriginal

dwelling-site, many contiguous fields having scattered over them fragments of stone, flint in the main, and some knives, lancepoints, and arrowheads, of flint, broken and whole. Three points selected from others gathered at this place are shown in Fig. 23, one of which, having been broken on one side, has been worked over to give the broken margin an edge. No rise was apparent in any of the fields, and the level ground seemed no longer to be midden debris, which presumably has washed away, leaving on the present surface what had been on it and in it.

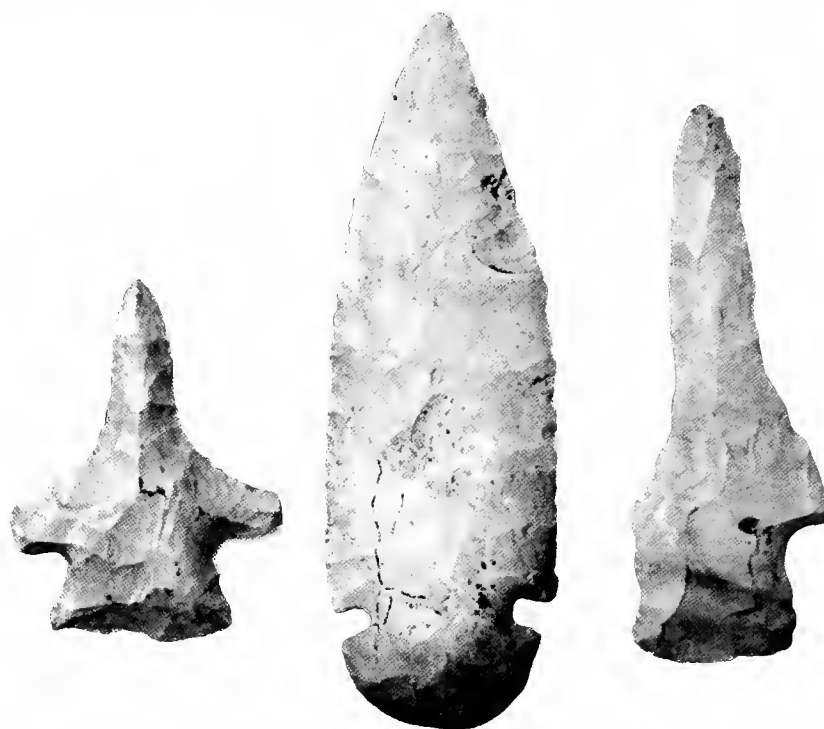


FIG. 23.—Points of flint. Site near Pickwick Landing (near Sulphur Creek), Tenn. (Full size.)

MOUND NEAR BOYD'S LANDING, HARDIN COUNTY, TENNESSEE.

In sight from the river bank when foliage does not intervene, about one-quarter mile in a northerly direction from Boyd's Landing, in woods forming part of the property of Mr. J. H. Lakey, living about one mile farther back from the river, is a mound 7 feet in height. The mound has been washed away to some extent, or dug into considerably, years ago. At all events, part of its northern side is missing, so that what probably was once a circular base with a diameter of 70 feet, has that dimension now only through its E. and W. parts. There was almost no summit-plateau, and the mound, judging from its shape, might well have been erected for burial purposes.

From the summit of the mound a hole 11 by 6.5 feet was carried to a depth of 7 feet 9 inches, reaching a dark band marking the original surface, 7 feet 7 inches down. From the base of this excavation five holes were dug, one in the center

and one in each corner, the corner ones extending 18 inches down through clay evidently without former disturbance, with one exception where 5 inches below the line of the base two masses of galena (lead sulphide), one somewhat larger than a clenched hand, one smaller, were found together. Both these masses were heavily coated with lead carbonate, the white-lead of commerce, used for the making of paint. In the great site at Moundville, Ala., we found this white-lead pigment on ceremonial palettes of stone in aboriginal graves. In the mound under description, these masses lay on undisturbed clay, but were surrounded by the dark material composing the base-line, and evidently were a deposit of some kind.

The central hole put down from the base, 4 feet long by 20 inches wide, was carried through material that seemed to have been disturbed, perhaps by the planting of a post. Nothing was discovered in this hole.

In the main excavation in the mound, which went through raw clay without indication of occupancy or of burial, were no fireplaces. The only artifacts found were occasional chips of flint and fragmentary projectile points, perhaps introduced with the clay in the making of the mound. Five masses of galena, two together, also were come upon in the digging. The discovery of quantities of galena will be described in our account of Tennessee river mounds in Alabama. The reader is invited to consult the "Handbook of American Indians" as to galena.

MOUND NEAR SWAN POND LANDING, HARDIN COUNTY, TENNESSEE.

Our agent visited a mound a short distance above Swan Pond Landing, on property of which Mr. Thomas McKelvy is the owner. This mound, according to our agent, has a flat top, is about 7 feet in height and 70 feet square. There is a building on this mound and permission to dig was not obtained.

MOUNDS NEAR THE MOUTH OF YELLOW CREEK, HARDIN COUNTY, TENNESSEE.

About one-half mile due west from the mouth of Yellow creek is a mound in woods belonging to Messrs. Walker and Ross, of Savannah, Tenn. This mound, apparently intact at the time of our visit, was 32 feet across its circular base. Its height varied, the mound being on a slope. From the upper side the altitude was but 1 foot 4 inches, while measured from the lower side it was slightly more than 5 feet.

An excavation 12 feet square was put down in the central part of the mound, showing it to be of raw, yellow clay and that there was no marked line of the base, compact clay of lighter shade than that of the mound being encountered, however, at a depth of 30 inches. This was dug out to an additional depth of one foot without showing modification and undoubtedly was the underlying clay of the mound.

Five inches from the surface was a skeleton much decayed, indicating a burial closely flexed to the left. Ten inches deeper were fragments of two long-bones.

Twenty-eight inches down lay mere traces of bones, and at about the same level, but some distance away, were the remains of two femora and two tibiae, not in order but lying side by side and having the remains of a skull at one end.

Twenty-two inches from the surface were two slabs and a mass of sandstone not in contact, the slabs being about 4 inches apart and the mass 5 inches from them. Altogether they covered a space 14 inches by 34 inches. On these fragments of rock were traces of bones, presumably all that remained of a burial which had lain on this placement of stone.

Apart from burials were found a mass of galena, and a graceful arrowhead or lancepoint of flint, slightly more than 3 inches in length, having a conspicuously long stem and similar to one figured by Thruston¹ as coming from Tennessee. It is also a Missouri form.²

One-quarter mile WSW. from the mound just described is another, also in woods and of the same ownership, into which previous diggers had run a trench a yard in width, from the margin to the central part, broadening somewhat there. The height of the mound was 4.5 feet; the diameter of its circular base, 38 feet.

An excavation 16 feet square was put down through the light-yellow clay of the mound to what seemed to be the base, about 5 feet from the summit, where compact clay, darker in shade and soon merging into red, was encountered. On this hillside it was evident no dwelling place had been, so no midden debris was present between the undisturbed clay and the body of the mound.

Near the surface was a slab of limestone under which were a human pelvis and the upper parts of two femora, evidently the remainder of a burial which had been cut away by the previous digging, at the edge of which these remains were found. Slightly more than one foot down and at a depth of 4 feet, respectively, were traces of bones.

About 3 feet down was a fireplace on which clay used in making the mound had been thrown. This clay had been somewhat discolored by the heat.

About 9.5 feet from the center of the mound, 2 feet 4 inches down, under the slope, were two slabs, one of sandstone, the other of limestone, and a mass of cherty material, arranged rudely in the form of a horizontal triangle with an altitude of 2 feet 7 inches and 2 feet across the base, which was composed of a slab and a mass side by side, the remaining slab forming the apex of the triangle. Three other slabs were in the soil somewhat above the grave, separated, without arrangement, apparently not directly connected with it.

Under this triangle of stone was a burial of an adolescent rather closely flexed on the right, the bones, even the ribs, retaining their shape but crumbling somewhat on removal. With the exception of the pelvis, which protruded, and of small parts left unprotected where the slabs and the mass were not in contact, the skeleton was completely covered by the stones.

¹ *Op. cit.*, Plate XI.

² Gerard Fowke, "Prehistoric Objects Classified and Described," Plate X, Bulletin 1, Missouri Historical Society, Department of Archæology.

Five feet to its bottom, in part under the stone grave just described, was a grave-pit 2 feet 3 inches wide by 6 feet 5 inches in length, extending 2 feet into the undisturbed clay below the base of the mound. This grave, in which no trace of bone remained, had been filled with the yellow clay of the mound. It is interesting to note in this mound the absence of a central grave or of one comparatively near the center of the base.

PART II.

TENNESSEE RIVER IN MISSISSIPPI AND IN ALABAMA.

Here, continuing our investigation on Tennessee river, we leave the state of Tennessee for a time and for a few miles have Mississippi on our right and Alabama on our left, as we ascend the stream. Then our exploration is continued in the state of Alabama.

Mounds and Sites.

Mound near Hubbard Landing, Tishomingo County, Mississippi
 Dwelling-site at Baugh's Landing, Lauderdale County, Alabama.
 Mounds near Riverton, Colbert County, Ala.
 Dwelling-sites near Colbert Creek, Colbert County, Ala.
 Mounds on the Johnson Place, Lauderdale County, Ala.
 Dwelling-sites on Koger's Island, Lauderdale County, Ala.
 Mounds near Perkins Spring, Lauderdale County, Ala.
 Dwelling-site near Cane Creek, Colbert County, Ala.
 Mound and Dwelling-sites on Seven Mile Island, Lauderdale County, Ala.
 Mound near Florence, Lauderdale County, Ala.
 Dwelling-site on Gilchrist Island, Colbert County, Ala.
 Dwelling-site at Lock No. 3, Lauderdale County, Ala.
 Periwinkle Hill, Lauderdale County, Ala.
 Dwelling-site on the Weaver Place, Lauderdale County, Ala.
 Mound on Tick Island, Lawrence County, Ala.
 Mounds above Nance's Reef, Lauderdale Co., Ala.
 Mound near Sycamore Landing, Lawrence County, Ala.
 Dwelling-site on Gilchrist Island, Lawrence County, Ala.
 Dwelling-site above Milton Bluff, Lawrence County, Ala.
 Mound on Brown's Island, Lawrence County, Ala.
 Dwelling-site at Brown's Ferry, Limestone County, Ala.
 Dwelling-site on Mason Island, Limestone County, Ala.
 Mound on the Steel Place, Limestone County, Ala.
 Mound at Decatur, Ala.
 Mound and Dwelling-site near South Flint River, Morgan County, Ala.
 Mound near Limestone Creek, Limestone County, Ala.
 Dwelling-site on the Hopper Place, Madison County, Ala.

Dwelling-site near Cataco Creek, Morgan County, Ala.
 Mounds on the Slaughter Place, Morgan County, Ala.
 Dwelling-site at White's Ferry, Madison County, Ala.
 Mound and Dwelling-site above Chunn's Landing, Morgan County, Ala.
 Mounds and Dwelling-site on Hobbs Island, Madison County, Ala.
 Dwelling-site at the mouth of Flint River, Madison County, Ala.
 Dwelling-site near Bean Rock, Marshall County, Ala.
 Dwelling-site near Paint Rock Landing, Marshall County, Ala.
 Dwelling-site on the Foster Place, Marshall County, Ala.
 Dwelling-site on the Penney Place, Marshall County, Ala.
 Mound near Guntersville, Ala.
 Dwelling-site on McKee Island, Marshall County, Ala.
 Dwelling-site on the Seibold Place, Marshall County, Ala.
 Mounds on Henry Island, Marshall County, Ala.
 The Roden Mounds, Marshall County, Ala.
 Mound and Dwelling-site on Pine Island, Marshall County, Ala.
 Dwelling-sites near Garland's Ferry, Jackson County, Ala.
 Mounds on the Snodgrass Place, Jackson County, Ala.
 Cox Mound and Dwelling-site, Jackson County, Ala.
 Mounds on the Rudder Place, Jackson County, Ala.
 Mounds near Widow's Creek, Jackson County, Ala.
 Mounds near Williams Landing, Jackson County, Ala.
 Mounds and Dwelling-site on Bridgeport, or Long, Island, Jackson County, Ala., and Marion County, Tenn.

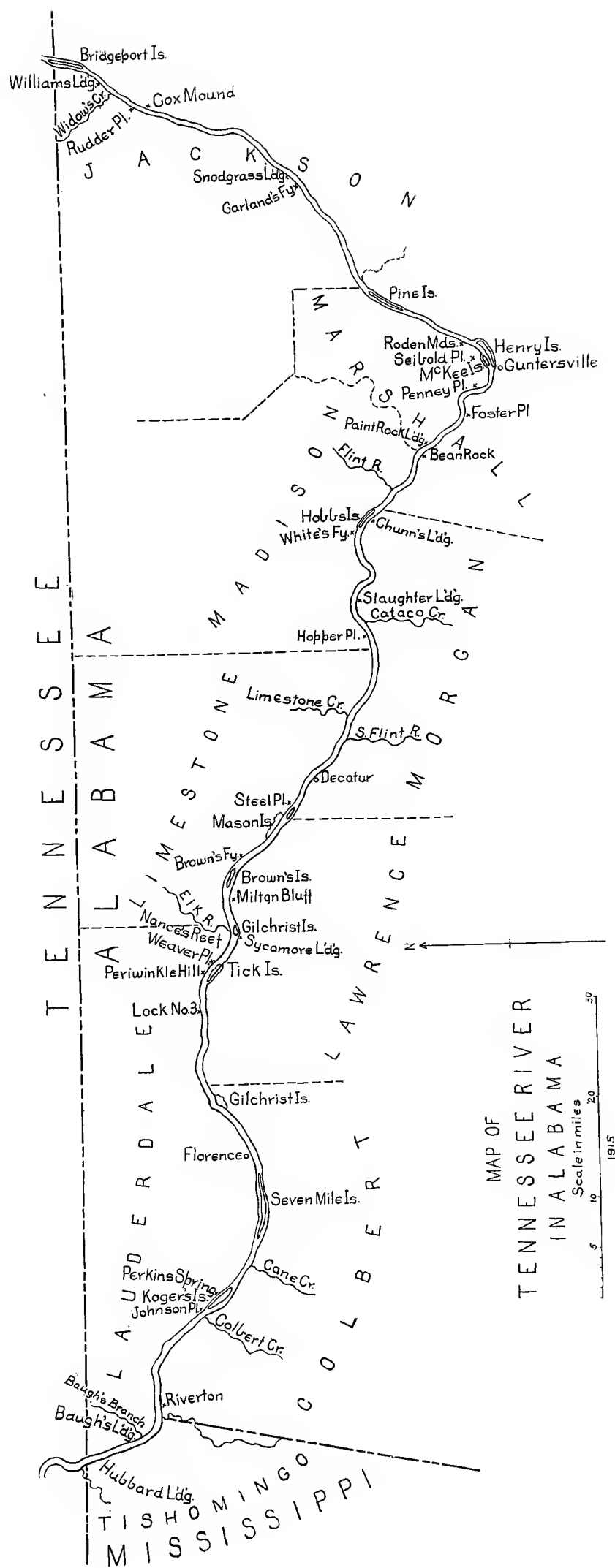
MOUND NEAR HUBBARD LANDING, TISHOMINGO COUNTY, MISSISSIPPI.

About one mile in a WSW. direction from Hubbard Landing, near the residence of Mr. R. L. Hubbard, to whom it belongs, is a mound about 4 feet in height and 30 feet in diameter. We visited this mound but found its central part completely dug away.

DWELLING-SITE AT BAUGH'S LANDING, LAUDERDALE COUNTY, ALABAMA.

At Baugh's Landing is a large, cultivated field belonging to Mr. J. J. Baugh, who lives about one mile inland. The southeastern corner of this field is formed by the junction of Baugh's branch with Tennessee river. In this part of the field is a slight rise above the general level, having an irregular boundary, but approximately 175 feet in diameter. This elevation was covered thickly with the usual debris found on aboriginal sites. In addition were picked up a globular shell bead about .6 inch in diameter, and several discs made from fragments of pottery vessels. Bits of human bones lay here and there.

Trial-holes came almost at once upon burials and indicated that interments had been made mainly in the central part of the elevation, which was slightly



higher than the rest of it. Such burials as were found by us belonged to the later period of the growth of the midden deposit, as none were found at a depth greater than 3 feet 8 inches, and most were considerably nearer the surface.

From the surface of the central part of the elevation to undisturbed ground beneath was 9 feet, through midden soil mixed with shells, the shells being comparatively numerous but not forming any large proportion of the material. Away from the central part of the elevation, however, shells in places were almost without admixture of soil, as if such spots had served as general dumping places.

Varying in depth between one and two feet the superficial soil of the site was very dark. Below this it was much lighter in shade, and on this account, and by reason of the admixture of dark material from above, such pits as were found in the lighter soil were readily distinguishable. There were, however, in this lighter material below the dark soil, three graves which had not been sunk through the dark layer, but lay in the light material unmixed with dark soil from above, and evidently had been buried before the accretion of the superficial part of the elevation.

A thorough examination of this site was not made, only two really deep trial-holes having been put down. By the time the central part of the site, a space about 40 feet in diameter, had been dug through to a depth not exceeding 5 feet, the owner, by bringing forward a claim that everything found should be considered his property, caused us to terminate the investigation.

In much of the central portion of the elevation (no burials were found in the trial-holes sunk in the outer parts, though doubtless some were there and would have been found by us had the investigation continued) burials had been numerous, grave often intersecting grave and depriving the earlier burial of some of its parts. When but a comparatively small proportion of the skeleton was missing, enough remaining fully to indicate the form of burial, the interment was included in our list, but scattered bones, of which a considerable number was found, were not particularly noted.

The condition of the bones at this place probably owing to the presence of so much shell, which seems to reinforce skeletal remains by the addition of salts of lime, was fairly good; two skulls were preserved.

In all, twenty-five burials were encountered. Of these, fourteen were of adults, two of adolescents, nine of infants or of older children.

Of the sixteen adults and adolescents, six were extended on the back, one was closely flexed to the right, three were partly flexed to the right, one was closely flexed to the left, and one partly flexed to the left. Two were bunched burials of single skeletons and two will be particularly described.

Of the twelve burials which lay with the skulls directed horizontally in various directions, one pointed E., one E. by S., two ESE., three SE., two SE. by S., one SSW., one W. by N., one WNW.

Burial No. 12 had the pelvis and the feet on the same level, the trunk up-

right, the knees erect but somewhat parted, the forearms drawn up against the upper arms, which were in contact with the sides of the body. The head was forced forward and down, the top of the cranium resting on the ground immediately in front of the pelvis. The burial, of course, had been wrapped in this position, which made for great economy of space.

Burial No. 19 much resembled the preceding as to arrangement, with the difference, however, that the forearms were crossed on the pelvis and the skull rested on them.

About 3 feet from the surface and immediately on a fireplace, though the bones showed no mark of heat, was the skeleton of a dog, in complete order, the identification having been made by Dr. F. A. Lucas, who writes, "It is an example of the characteristic, short-faced 'bull terrier' breed of dogs that seems to have been popular in our south and southwest."

The remains of the Indian dog as found in the shell-heaps of Maine (and incidentally in some shell-heaps of New York and in certain aboriginal cemeteries of Arkansas) have been interestingly described by Loomis and Young.¹ The jaw of a dog found by us in a Florida shell-heap is described by the late Prof. E. D. Cope.²

Artifacts were present with but five burials, as follows:

Burial No. 3, a child, had at the head a pot with loop-handles.

Burial No. 4 had the skull resting on a fragment of pottery. At the left of the head was a bottle with slender neck and expanding opening, having a trailed decoration on the body made up of partly interlocked scrolls (Fig. 24), a design well known on earthenware beyond the Mississippi. At the outer side of the right elbow were two small celts, one of quartzite, one of igneous rock, and a somewhat larger one of shale, rudely fashioned, at the outer side of the right thigh.

Burial No. 5, a child, had a pot with loop-handles lying inverted at the right side of the skull, and a good-sized pot, also with loop handles inverted over the feet.

Burial No. 9 had at the head part of a coarse, undecorated bowl in which lay a large musselshell (*Symphynota complanata*) and an undecorated bottle with globular body and wide mouth. At the outer side of the left knee was a large pot having loop-handles, upright, containing a vessel of coarse ware but of interesting form. Around the upper part of the body are two encircling rows of knobs, and on the margin of the opening all around have been notches. From the level of the opening, on two opposite sides, have been extensions through which fluid could be poured. Part of one of these, unfortunately, was crushed by the blow of a spade in the hands of one of our diggers. Under each of these extensions has been a loop handle, both of which, apparently, have been

¹ F. B. Loomis and D. B. Young, "On the Shell-heaps of Maine," American Journal of Science, Vol. XXXIV, July, 1912, p. 17 *et seq.*

² "The American Naturalist," July, 1893, p. 614.

broken off during the period when the vessel was in use; a hole drilled in the extension remaining intact indicates that the broken one had a similar perforation, the two holes taking the place of the handles. This vessel, after restoration of the broken extension, is shown in Fig. 25.



FIG. 24.—Bottle of earthenware. Baugh's Landing, Ala. (Height 9 inches.)

A number of vessels of this class (which seems to be found principally in northern Alabama), though varying considerably in detail, was found by us, all somewhat broken, though restorations have been made, and will be described and figured by us in the course of our report on that part of Tennessee river which flows through Alabama.

Burial No. 23, adolescent, had at the neck forty-nine small, discoidal beads apparently made from fresh-water musselshells, and a shell pendant fashioned from the columella of a conch (*Busycon*) pointed at one end, blunt at the other end which has a transverse hole for suspension.

The pots from this place, coarse, shell-tempered ware, were nearly all badly

broken when found. The bottle we have figured is symmetrical and exhibits much more ambition on the part of its maker than any we encountered to this point on Tennessee river, except possibly the one found by us in the mound at Pittsburg Ferry, somewhat farther back. The bottle from Baugh's Landing, however, has trailed decoration of a quality better than any seen by us in Tennessee



FIG. 25.—Vessel of earthenware of a kind found principally in northern Alabama. With Burial No. 9. Baugh's Landing, Ala. (Height 4.8 inches.)

Mr. Baugh, the owner, had an earthenware pipe which he said had been plowed up on the site under description. This pipe, which was examined by members of our party, has a flat base projecting somewhat beyond the bowl. The bowl of the pipe had been modeled to resemble an ordinary bowl in use for domestic purposes, having four loop-handles, which, however, had been partly broken off. Around the body of the bowl are knobs similar to those shown by us on the vessel from this place.

MOUNDS NEAR RIVERTON, COLBERT COUNTY, ALABAMA.

In a cultivated field belonging to Messrs. Buchanan and Sloan, of Riverton, Ala., about 200 yards SE. from the government building at the entrance to Colbert Shoal canal, is a mound which at the time of our visit was 5 feet 6 inches in height and about 100 feet in diameter. This mound, a mixture of sand and

clay, probably had been quadrangular, with a flat top, but had been plowed over so continuously that it no longer possessed a definite outline.

Two large trial-holes reached the base of the mound at respective depths of 6 feet 9 inches and 6 feet, the latter hole being on the slope. These holes and others, sunk on the sides of the mound, encountered no burials or artifacts.

The field surrounding the mound is covered with quantities of pebbles, broken and whole, and many chips and fragments, all of flint. Among these were some broken points but whole ones were rare. No shells and but little pottery were apparent. This dwelling-site presumably had grown up around the mound to some extent, which accounts for the discrepancy in height as taken from the outside and from the inside of the mound.

In the same field, about one-half mile SW. from the other, is a remnant of a mound, about 4 feet in height and 35 feet in diameter. The presence of a large stump on top of this elevation presumably has kept it from being plowed away.

A thorough examination accorded this remnant failed to discover bones, but came upon one arrowhead or knife, of flint, and three masses of galena (lead sulphide) placed together. The largest of these, which had been rubbed down to a discoidal form, was 2 inches in diameter and one inch in thickness. The deposit of lead carbonate on these masses, which, being white lead as we have stated, the aborigines sometimes used as paint, was thicker and whiter than we have noted before on galena found by us, and would, with the addition of bear's grease, make a perfectly white paint.

DWELLING-SITES NEAR COLBERT CREEK, COLBERT COUNTY, ALABAMA.

All on property owned or controlled by Mr. William Rutland, of Cherokee, Ala., are three dwelling-sites visible from the river.

One, about one mile below the mouth of Colbert creek, was dug into by us to some extent, but was found to be so solid a mass of crushed shell and soil, and digging progressed so slowly, that it became evident a very long time would be required to investigate the site, so work on it was discontinued.

The next site in order going upstream, on the north side of the creek, at its mouth, was made up of material similar to that found in the other site, and its investigation was abandoned for the same reason. The skeleton of an adolescent partly flexed to the left, the head N., was encountered 13 inches below the surface. At the outer side of the left elbow was a small bowl having loop-handles.

Immediately across the creek is another dwelling-site, much smaller than is either of the other two. At one side of this site is a small elevation, probably intentionally made as a place of burial, as its material, dark alluvial soil, had no admixture of midden debris.

Four large trial-holes sunk into this elevation, which proved to be only a remnant of a mound, came, in one instance, at a depth of 15 inches, on the skeleton of an adult, partly flexed to the left, the head SE. Above the left elbow was half of a bowl, and a bottle with wide mouth having had a most unusual

feature for a bottle, namely, a loop-handle at two opposite sides immediately below the opening, one of which, however, had been broken off and lost prior to the inhumation of the vessel. This bottle, with the missing handle restored, is shown in Fig. 26.



FIG. 26.—Bottle of earthenware. Colbert Creek, Ala. (Height 6.5 inches.)

MOUNDS ON THE JOHNSON PLACE, LAUDERDALE COUNTY, ALABAMA.

About one-quarter mile back from the landing, at the Johnson Place, belonging to Mr. John Beckwith, of Florence, Ala., are two fine-looking mounds near together, one about 10 feet in height, the other 7 feet approximately. Permission refused.

DWELLING-SITES ON KOGER'S ISLAND, LAUDERDALE COUNTY, ALABAMA.

Koger's Island, controlled by Mr. J. T. Reeder, of Smithsonia, Ala., has about midway on its western side a landing at which is the only settlement on the island. Immediately back of this settlement is some cultivated ground,

ending in a slope, and on this slope in years past, all within a comparatively restricted area, have been plowed up, according to the statements of those living in the settlement, a considerable number of vessels of soapstone, some whole, some shattered by the plow. At the time of our visit numerous fragments of these vessels lay over the surface of the ground, and part of a pailful of other fragments were shown us by a person living nearby. The flat base of a soapstone vessel which must have been of interesting shape, is in the possession of Mr. Reeder, at Smithsonian. We were informed that none of the vessels had been found for several years, and our investigation of the place where the vessels had been convinced us that the upper soil which had contained them had been



FIG. 27.—Trowel of earthenware. Koger's Island, Ala. (Full size.)

removed by cultivation and by wash of rain. However, we succeeded in obtaining one, though not by excavation, the lugs at each side being an interesting though not an uncommon feature.

Near the upper end of the island is a large field covered with fragments of flint and of coarse, shell-tempered pottery, some bearing a check-stamp decoration conferred, as we know, with a paddle. Here and there lay fragments of human bones. From the surface we obtained a number of rough implements of moderate size, and some arrowheads of flint, also a heavy object of earthenware, shown after partial restoration in Fig. 27, which, though differing somewhat from those figured by Thruston,¹ probably was a trowel used for smoothing earthenware vessels.

¹ *Op. cit.*, p. 162.

This site was made up of dark midden soil to a depth of about 18 inches, when a mixture of soil and shell, the shell predominating, was encountered. Considerable digging led to the discovery of the skeletons of two young children, both in the upper soil. A knoll at one side of the field was carefully investigated without success.

We obtained from an inhabitant of this place an oblong gorget of igneous rock, having two perforations, 5.75 inches in length and 2.25 inches in maximum width. We were informed by the colored man who had plowed the large field for a long period back, that ten years ago gorgets of this class were frequently found there, and we, at the time of our visit, came across fragments of two of them on the surface.

A woman resident in the settlement showed us a drinking-cup wrought from a conchshell, which she had found and which was interesting in that it had a circular hole in the base, not broken through but evidently cut out with much care, thus clearly demonstrating that the "killing" of a vessel for interment with the dead had taken place as far north as northern Alabama.

A spade of shale, 17 inches in length and about 5 inches wide, was picked up from the surface by a member of our party in another part of the island.

MOUNDS NEAR PERKINS SPRING, LAUDERDALE COUNTY, ALABAMA.

Leaving the main landing, which is on the western side of Koger's Island, and following a road leading across the island, one comes, after about one mile's walk, to a waterway almost dry when the river is low. Crossing this, one is but a short distance from Perkins Spring, on property belonging to Mr. J. T. Reeder, of Smithsonia, Ala., to whom the Academy is indebted for many courtesies.

MOUND A.

In a very large, cultivated field covered with fragments of stone, evidently an aboriginal dwelling-site in the past, is a mound about 200 yards NNE. from Perkins Spring. This mound is 7 feet 8 inches in height, outside measurement, and 62 feet by 55 feet in diameters of base. The mound, which had every appearance of having been erected for burial purposes, apparently had never been under cultivation, nor was any previous digging in evidence.

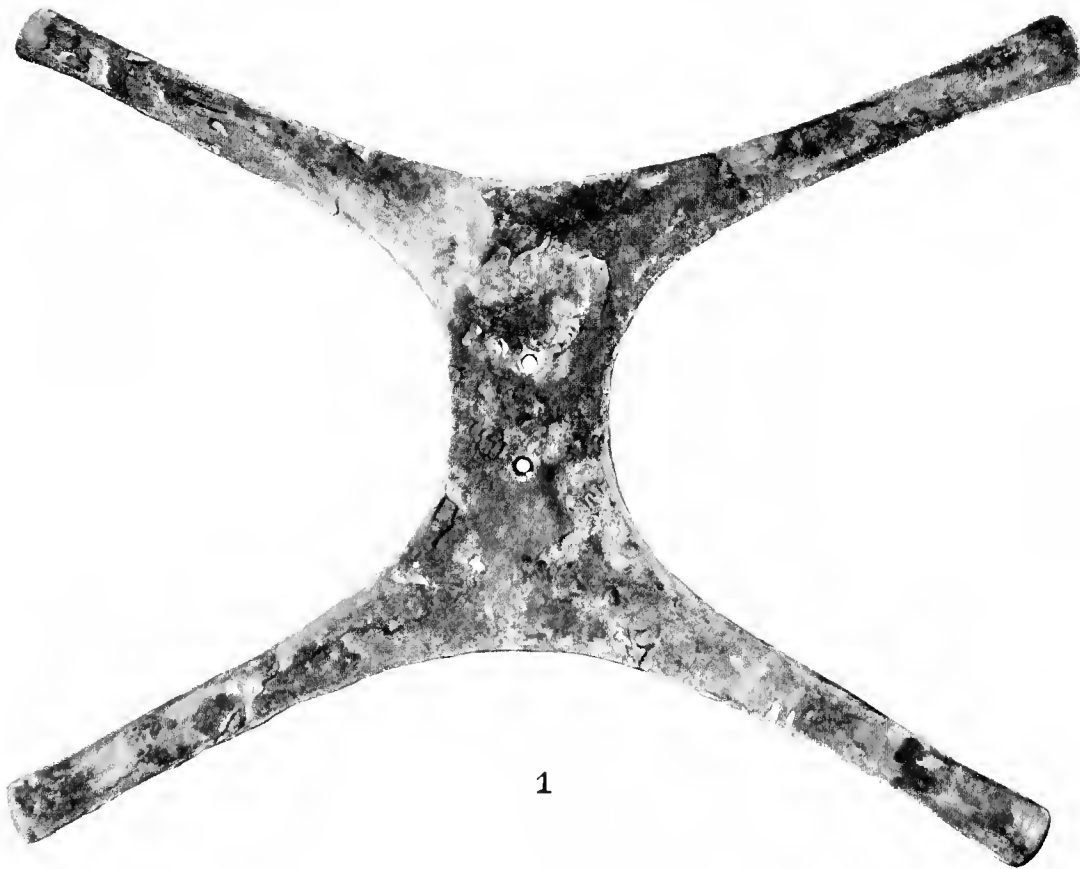
In its central part an excavation 16 feet square was put down, and eight trial-holes to be described later were sunk around it.

The mound was of brown, loamy material in the upper part, below which was black, midden soil containing small fragments of stone and other dwelling-site debris. Below this, over part of the base of the mound, was raw, yellow clay which had been dug from underlying clay in making a large grave that had been filled in part by the return of some of the yellow clay and by black, midden soil of the kind found in part of the mound.

The base of the mound was reached at a depth of 6 feet 6 inches, and was marked by the presence of a black deposit, 9 inches in depth, which formed



FIG. 28.—Agricultural implement of shale, having double cutting edge. Perkins Spring, Ala.
(Full size.)



• M. L. BAKER •

1. MOUND NEAR PERKINS SPRING, REEL-SHAPED ORNAMENT OF COPPER. (FULL SIZE)
2. MOUND ON THE SLAUGHTER PLACE, REEL-SHAPED ORNAMENT OF COPPER. (FULL SIZE)

the original thickness of the dwelling-site and rested upon the yellow, undisturbed clay. Around the mound all this midden soil had been washed away by rain after cultivation, thus rendering the mound higher than it originally had been.

The following burials were encountered in the main excavation.

Burial No. 1. About one foot down was a skeleton extended on the back, badly decayed, having at the left side of the skull a small bowl of a size usually found with burials of children, having had four rude handles, one of which is missing, and a double row of indentations below the opening. Near the bowl was a small knife of flint.

Burial No. 2, two feet from the surface, was the remainder of a skeleton consisting of traces of the skull and of the thigh-bones, which were at a distance from the skull such as to indicate that the skeleton had been extended and that intervening parts of it had decayed away. Along the space where the trunk had been was a layer of pure clay about 2 inches thick. About 2 feet from the shoulder was a double-bladed, agricultural implement of shale, 11 inches long and 4.3 inches wide (Fig. 28), possibly having belonged to another burial which had entirely gone.

Burial No. 3, remains of a skeleton extended on the back at a depth of 5 feet 3 inches, the skull resting in a drinking-cup wrought from a conchshell (*Busycon*). At the left of the skull was a small deposit of clay about 6 inches in diameter. On the thorax lay a mass of galena (lead sulphide) about ten pounds in weight, under which were a few discoidal shell beads, badly decayed.

Burial No. 4 also was extended on the back, at the same depth as the preceding burial. On the upper part of the thorax rested a mass of galena, 2.5 inches by 2 inches by 1 inch thick, flat and showing considerable grinding, as did nearly all the galena found in this mound. At the feet of the burial was a small mass of pure clay.

Burial No. 5, not far from the center of the base, was a grave, oblong, 7.5 feet in length and 2.5 feet wide, extending through the midden soil below the base and entering the undisturbed, yellow clay to a depth of about 2 inches.

In this grave lay a skeleton, extended on the back, having, at each side of the head, a well-preserved, spool-shaped ear-ornament of copper. On the upper part of the pelvis was a reel-shaped, ceremonial ornament of copper (Plate V, Fig. 1), the longer axis of the body of the ornament with its two perforations lengthwise, corresponding in direction to that of the skeleton. At the foot of the grave was a mass of pure clay.

The reel-shaped, ceremonial ornament of copper, to our knowledge, has been but once previously described. Thruston¹ figures one of these objects and speaks of it as probably used as a pendant or breast ornament. It was found, he says, in a mound in Marshall County, Tenn. (This county is about south from Nashville, midway between the Cumberland and Tennessee rivers.)

¹ *Op. cit.*, Plate XVA, p. 352j.

To Prof. W. K. Moorehead we are indebted for the information that one of these ceremonials from a mound at Newark, Ohio, is in the collection of Phillips Academy, Andover, Mass. In a note accompanying a tracing of this ornament, written some time ago by Mr. R. S. Peabody, we are told, "Objects of this form are very unusual in stone and only one or two of copper are in the museums."

Evidently this class of ceremonial ornament hitherto has been but little known, presumably because its vogue was principally among the aborigines of northern Alabama, where there has been so little archæological research.

We have examined the handsome, reel-shaped ceremonial of copper in the small but interesting collection of the University of Alabama, at University, Ala., near Tuscaloosa, which, owing to its size and the graceful, terminal expansion of the arms, is the most striking example of this class of objects of which we have knowledge (and we obtained nineteen of them in varying degrees of completeness from mounds along Tennessee river in Alabama). We are under obligation to Prof. Eugene A. Smith, State Geologist of Alabama and member of the faculty of the University, for full details as to this ceremonial, which is nearly 6.5 inches by 8.5 inches, over all, and about .1 inch in thickness. It came from near the Coosa river in Coosa county, Ala., some distance south from where most of our objects of this kind were obtained.

We were not able to decide positively on what part of the body these ceremonials were worn, as we found them both on the chest and on the pelvis of skeletons, and having the perforations sometimes in line with the burial and sometimes transverse to the skeleton. Usually, however, when determination was possible (and frequently it was not), the ornament lay on the chest, and the two perforations were across and not in line with the trunk. Several of our specimens, wrought from unusually thick material, are without perforations.

Now to return to the burials.

Burial No. 6, lying about midway on the base of the large grave which we have referred to at the beginning of the account of this mound, was what was left of a skeleton, extended face down.

The grave, one side of which almost passed through the center of the base of the mound, was 9 feet 8 inches in length and 4 feet 4 inches in width. The depth of the grave from the top of the mound was 9 feet 8 inches. It extended through 9 inches of the midden soil already described and entered the undisturbed, yellow clay to a depth of 2 feet 5 inches.

Alongside the burial was a mass of pure gray clay, 8 feet long and 13 inches wide, increasing to 16 inches at the feet. Its thickness was about 5 inches down to the feet, which rested upon it. Beyond them it increased in thickness about 2 inches and contained masses of pure red clay. This clay deposit did not rest against the side of the grave, but lay 10 inches from the head wall and 9 inches from the wall of the adjacent side. Its distance from the foot of the grave about corresponded with that of the head.

At the right shoulder was a mass of galena, about five pounds in weight.

Under the lower dorsal vertebræ was a copper celt, 4 inches long by about 2 inches in maximum width. The preservative properties of the copper carbonate on this celt were the only means we had to determine that the skeleton had been placed in a prone position, as several of the vertebræ indicating this fact had been kept in fairly good condition by the copper salt, the rest of the burial being represented merely by traces.

At the knees was a mass of galena, weighing ten pounds, and at the ankles, resting on the clay, was another mass weighing about six pounds.

Burial No. 7, in the same grave as was Burial No. 6, was the skeleton of a child lying in a direction like that of the adult. If the child's skeleton lay on its back, which its condition did not permit us to determine, then the skeleton had a side of the grave at its left and the adult burial at its right, the mass of clay described lying on the other side of the burial of the adult. Near the skull of the child, probably at the neck, was a spherical bead of solid copper, flattened at the poles, one inch in diameter.

Apart from any burial, in the main excavation in the mound, was a small mass of lead sulphide.

We now take up details of the eight trial-holes before referred to, which, 3 feet by 6 feet each, were put down around the main excavation in the hope of coming upon additional graves. These holes were greatly increased in all directions when the base of the mound was reached, so that most of it may be considered to have been investigated. The result was as follows:

Burial No. 8, a skeleton extended on the back, lay at a depth of 4 feet 9 inches, not far from the base, as the mound sloped considerably above where the burial had been made. This interment was not in a pit, but had been placed in the mound during its construction, as the soil above and around it showed no mingling of material other than that of the mound.

Above this skeleton had been placed an arrangement of slabs, some of limestone, some of claystone, certain ones, especially those at the ends, being thin and of considerable size. The arrangement, 8 feet long by 1 foot 10 inches in width, in the main consisted of two layers, but in one place, at least, there were three thicknesses of slabs. Below the lower extremities of the skeleton, the grave had sunk, the stones above sinking with it, and had become somewhat disarranged. The reason for this became apparent when it was found that another grave lay under the lower part of Burial No. 8 and that in settling it had caused that part and likewise the slabs above, to sink also.

The only thing found with the burial was a mass of pure clay at the feet. It was evident that the makers of this grave had, as generally seems to have been the case with stone graves, fulfilled most of their duties when they had arranged the slabs.

At a depth of 40 inches, in soil darker than the material of which this part of the mound was composed, the deeper shade probably being the result of decay of human remains, was a reel-shaped ornament of sheet-copper, parts of which had disintegrated.

Six feet down, below the slope, was a grave 3 feet 7 inches long by 17 inches wide, made through the midden deposit and extending one foot into the undisturbed, underlying clay. Absolutely nothing was found in this grave, which undoubtedly had been that of a child, possibly an infant.

Immediately on the yellow or underlying clay, 5 feet 10 inches deep at this part of the mound, was a layer of red clay, 30 inches long by 1 foot in width and 2 inches thick, which probably marked a grave that had been put down through the midden soil above. Under the deposit of clay was a small amount of dark material, possibly the remains of a burial, and four small, copper beads.

Eight feet seven inches deep, extending 2 feet into the undisturbed yellow clay, was a grave 9 feet long and 28 inches wide, in which the skeleton that undoubtedly had occupied it had entirely disappeared through decay. On the base of the grave was a mass of lead sulphide larger than a man's fist, and at one end was a mass of clay.

MOUND B.

Mound B (from which Mound C was but a few yards distant) is in the same great site as Mound A and also the property of Mr. J. T. Reeder, and is about one-half mile SE. by S. from Mound A. The mound, which has been cultivated over for a long period and largely plowed down had, at the time of our visit, a height of 3.5 feet and diameters of 60 feet and 50 feet, but as the material plowed from the mound had been spread around it, its height, taken from the outside, was considerably less than the distance from the summit to the interior base, while, no doubt, the diameters of the mound were much less before it was plowed over than at present.

A hole 16 feet square was sunk in the central part of this mound. Two and 2.5 feet down, respectively, were eighteen masses of galena and twelve masses of the same material, mostly small.

At a depth of slightly more than 3 feet had been a burial, though no trace of bones remained. This burial, which was not in a grave dug for it, but lay in the body of the mound surrounded by the material of which the mound was composed, had been covered by a layer of pure clay, nearly 5 feet long and from 18 to 22 inches in width. This layer, 2 inches thick as a rule, increased to 7.5 inches in thickness at one end. On the bottom of the grave, surrounded by the clay, was a mass of galena 3 inches by 2.5 inches by 2.5 inches, smoothed in places by rubbing.

Four feet down were traces of a skull which may have been interred alone, though it is possible that the remainder of the skeleton, badly decayed, had been dug away unnoticed by our men, since the remains did not lie in a grave, which would serve as a guide to those digging, but lay in the material composing the mound, without mixture.

Having its southeastern corner but a short distance from what we considered to be the center of the base, was a grave 10 feet 5 inches long and about 5 feet

in width, its base about 7 feet from the top of the mound, and extending 2 feet into undisturbed, underlying clay, its long axis in an E. by N. and W. by S. direction.

On the base of this grave presumably had been a burial or burials which had been covered in the main by a layer of pure clay and one of sand, the sand below the clay. These layers began 19 inches from the eastern end of the grave, and outside them were the remains of a skull on the base of the grave, the only human remains found in it. The layer of clay, which had been symmetrically placed in the grave, with a view to the distance between its sides and its ends and those of the grave, had a length of 6 feet 9 inches and a width of 2 feet 7 inches. Its maximum thickness was 5.5 inches.

The layer of sand immediately below the clay apparently began with the clay at the eastern end and continued to the western end of the clay, having a maximum thickness midway of about one inch.

Near the eastern extremity of the clay layer and surrounded by it was a mass of galena, smooth in places, about the size of a cocoanut, but of irregular outline, which must weigh more than twenty pounds. On the clay, in it and especially under it, where they were numerous, were small masses of galena, sometimes several together.

MOUND C.

Mound C, under cultivation at the time of our visit, is said to have been dug into considerably in the past, though but little sign of such digging was encountered. Its height was 2.5 feet; its diameter, 45 feet. From the top to the base, however, was almost 4 feet. An excavation 10 feet square was put down, which later was much enlarged.

About 15 inches down parts of a skull were found, near a previous digging.

A grave 9.5 feet long by 1 foot 8 inches in width, extending 1 foot into underlying clay, radiated from the center of the base NE. and SW., the southern end being nearest to it.

Burial No. 1. On the bottom of this grave, the head at the SW. end, was a skeleton extended on the back.

Burial No. 2. Having its feet resting on the pelvis of Burial No. 1 was another extended skeleton, without a skull, lying in a reverse direction.

At each side of the extremities of these two burials was a lower extremity of an adult skeleton, the feet directed NE., the knees of the two skeletons and of the partial burial being all together and having on them a skull (probably that belonging to Burial No. 2) and below them a shell drinking-cup in fragments.

A layer of clay covered the skeletons with the exception of the lower part of one femur, which protruded, and overlay the entire base of the grave with the exception of the terminal 9 inches at the NE. end. This layer was about 4 inches thick, increasing to about 5.5 inches at the NE. extremity.

Burial No. 3. Beginning a short distance from the center of the base, its

southern end nearest to it, was a grave running SSE. and NNW., and about at right angles from the long axis of the other grave.

The grave under description, 9 feet 9 inches long, 2 feet 9 inches wide at the southern, or head, end, broadening somewhat toward the feet, extended 2 feet into otherwise undisturbed clay. On the base of the grave was a skeleton extended on the back, the skull 19 inches from the end of the grave, having the front teeth, the chin, and cervical vertebræ dyed light green and olive green variously by carbonate of copper from thirty-six beads of sheet-copper, some tubular, some barrel-shaped, all comparatively small except one which is about 1.25 inch in length. Over the skull was a shell drinking-cup in fragments, also much decayed, and another shell cup and a mass of clay were about 6 inches distant. On the thorax was a mass of galena about the size of a child's fist, and on the trunk, above the pelvis, another mass somewhat larger. At the foot end of the grave was a mass of clay.

A careful search over the great site, including many fields making up this property, resulted in a considerable collection of lanceheads, arrowheads, and knives of flint. No triangular arrowheads were found, nor was a single fragment of pottery picked up on the surface or discovered in the mounds, though it was present on nearby Koger's Island.

DWELLING-SITE NEAR CANE CREEK, COLBERT COUNTY, ALABAMA.

Beginning at the mouth of Cane creek and extending down along the bank of Tennessee river, on property belonging to Mr. R. M. Garner, who resides about

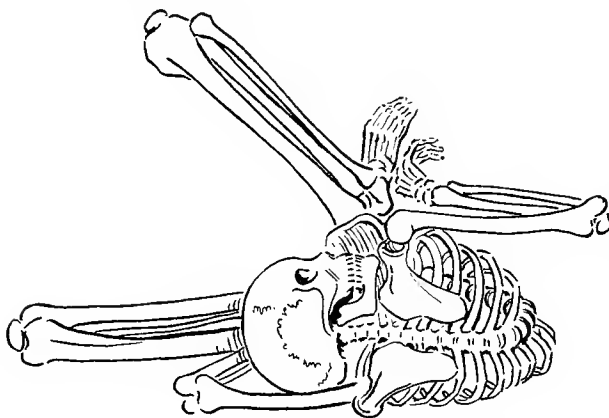


FIG. 29.—Burial near mouth of Cane Creek, Ala.
The trunk and the extremities are in the same plane.

was extended, the elbow being beyond the head, the forearm flexed, with the hand under the head. The femora were in the same plane as the rest of the skeleton, but widely separated, the legs closely flexed against them, as shown in Fig. 29.

To one looking down into the grave, the burial, flattened out on one plane, with its various projections, presented a curious appearance.

a mile back in the hills, is a dwelling-site where a small amount of work was done by us, resulting in the conviction on our part that burials in the site must be widely separated. One skeleton was found, however, with no artifacts in association, which proved to be of interest as presenting an unusual form of burial. The body had been bent and flattened, the head resting upon the pelvis, the right humerus was parallel to the side of the body, the forearm being closely flexed upon it, the left humerus

MOUND AND DWELLING-SITES ON SEVEN MILE ISLAND, LAUDERDALE COUNTY, ALABAMA.

Seven Mile Island, whose length is nearly that implied by its name, abreast of the town of Sheffield, Ala., as to its upper extremity, belongs to Mr. F. M. Perry, of Florence, Ala., who kindly placed it at our disposal for investigation.

About one-half mile from the lower end of the island is a small dwelling-site in a cultivated field, distinguished by much darker soil than that of the rest of the field, and having a few shells and fragments of flint on the surface. Burials probably had been made in this site, and in fact a single human tibia was unearthed, but an investigation that was far from exhaustive, however, shells closely packed retarding the work, failed to find any.

About 2.5 miles from the head of the island, near its northern side, is a mound having little shape at present but seemingly one of the domiciliary class, 11 feet in height, the base being about 110 feet square. The mound is completely covered by a large barn and its adjuncts.

A few yards NE. from this mound, which stands in a cultivated field, is a slight rise having no shells on the surface or interiorly. A few fragments of flint, however, lay upon the ground.

Fifteen trial-holes which reached undisturbed clay at a depth of from 2 to 3 feet, variously, came upon two burials, one of which, about 10 inches down, badly decayed, evidently had been at full length.

The other burial, at a depth of 2.5 feet, had but little left. Near a few fragments of bone were several arrowheads, and in the soil which had been thrown out were others, all presumably having been in a deposit with a burial, with which also had been a mass of pure clay about the size of a woman's fist.

These arrowpoints, twenty in all, delicately made, all triangular, except one which, differing in shape from the others, is shown in Fig. 30, ranging between 1.1 inch and 1.7 inch in length, are of flint variously pink, light brown, gray, red.

About one-half mile from the head of the island is a small dwelling-site distinguished by a slight rise above the general level and by the presence of scattered shells on the surface. On this rise was a number of frame structures covering much of it. Some digging where space could be found reached a skull at a depth of 16 inches and a skeleton of a child somewhat deeper. A number of rude knives of flint were found in the soil apart from burials.



FIG. 30.—Arrowhead of flint. Seven Mile Island, Ala. (Full size.)

MOUND NEAR FLORENCE, LAUDERDALE COUNTY, ALABAMA.

The town of Florence is about one mile from the river. A short distance from the landing and beside the road leading to town is a mound in a cultivated field belonging to Mr. George P. Jones, of Florence. This mound, the largest

on Tennessee river, as we have stated elsewhere, 42 feet in height, quadrilateral with a flat top, is not rectangular, one end being longer than the other. Neither sides nor corners are directed in a significant manner. The mound, the sides of which are so steep that they are ascended with difficulty, apparently has had at the eastern side a causeway, now almost worn away. The basal diameters of the mound are 310 feet NE. by E. to SW. by W., and 230 feet SE. by S. to NW. by N. The diameters of the summit-plateau in the same directions, respectively, are 145 feet and 94 feet. The ends, however, of the plateau were 86 feet and 50 feet.



FIG. 31.—Vessel of earthenware. Gilchrist Island, Ala. (Height 5.3 inches.)

On the chance that burials had been made in the summit-plateau of this great mound, thirty-four trial-holes, none less than 4 feet in depth, were put down without so much as encountering a bone, an arrowhead, or a fragment of pottery.

In the field adjacent to the mound were several rises just above the level of the surface, on which was some scattered midden debris including half of a banner-stone of banded slate, of the type of the double-bladed axe.

DWELLING-SITE ON GILCHRIST ISLAND,¹ COLBERT COUNTY, ALABAMA.

About one mile inland, in an easterly direction from the principal landing on Gilchrist Island, of which Mr. William Richardson, of Florence, Ala., is owner, is a small field surrounded by woods. In the eastern part of this field is a gradual rise having a maximum height of about 4 feet and basal diameters of 190 feet and 210 feet. The surface is covered with fragments and chips of stone, mainly flint, but implements, whole, broken, or in any stage of manufacture were extremely rare.

Considerable digging in this rise showed a foot or more of black soil containing quantities of chips and fragments of flint. Beneath was midden soil having a large proportion of shells closely packed. Burials seemed to have been made here and there throughout the rise, but nowhere closely associated. A structure, however, on the central part of the rise prevented our digging in that part of it.

Five burials were encountered, three of adults, two of children. Of the adult skeletons, two were in flexed positions and one had been disturbed in aboriginal times.

The two children lay together, a young child along the legs of a larger one which had, at the right side of the body, two masses of rock and two others at the left of the head. On the legs of this burial was a fragment of a large vessel of earthenware, the concave side uppermost. In this stood a vessel of the type first found by us at Baugh's Landing, having extensions on opposite sides and loop handles (Fig. 31).

DWELLING-SITE AT LOCK NUMBER 3, LAUDERDALE COUNTY, ALABAMA.

At Lock Number 3, in the Musselshoals² canal, where Bluewater creek enters the Tennessee, is a large, aboriginal dwelling-site, said to belong to a Mr. Huston, of Memphis, Tenn. The site has been washed by rain after cultivation to such an extent that the midden soil has practically disappeared, leaving on the surface an enormous quantity of fragments of stone, mostly a coarse chert which would hardly lend itself to superior workmanship. Among the debris were "wasters" and uncompleted implements, and some rather rude tools, evidently finished though few were entire, as doubtless, in the course of years, they have been plowed up and plowed under and occasionally struck by the heavy knives of cutting machines used in clearing the field of cotton-stalks.

A brief search of the surface yielded a spade of limestone, some comparatively small, argicultural and cutting implements of flint, barbed arrowheads (some serrated), knives, and other objects. No small, triangular arrowheads were found.

¹ Another Gilchrist Island (locally pronounced Gilcrease), in Lawrence County, figures later in this report.

² Almost universally spelled Muscleshools. The name, of course, is derived from the shell-fish.

PERIWINKLE HILL, LAUDERDALE COUNTY, ALABAMA.

At the upper entrance to Musselshoals canal is a large shell deposit called Periwinkle Hill (locally "Pennywinkle") belonging to Mr. T. J. Thornton, living some distance back. The "hill," 12.5 feet in height and 128 feet by 168 feet diameters of base, is flat on top, probably through cultivation. As the "hill" was planted over at the time of our visit, no investigation was attempted.

DWELLING-SITE ON THE WEAVER PLACE, LAUDERDALE COUNTY, ALABAMA.

On the Weaver Place, of which Dr. L. A. Weaver, of Lamb's Ferry, Ala., is the owner, is a slight rise in a cultivated field, 155 feet by 215 feet, in view from the river. This rise, of dark soil having a sprinkling of shell on the surface, is markedly distinct from the ground around it, which is of much lighter shade and has no debris upon it. Trial-holes showed a considerable proportion of shell mingled with the soil and reached undisturbed earth about 3 feet 8 inches from the surface. Three burials were found, two of which had a single pebble each, of circular outline, which probably took the place of discoidal stones. A number of rude knives were met with on the surface and in the soil.

MOUND ON TICK ISLAND,¹ LAWRENCE COUNTY, ALABAMA.

On Tick Island, of which Mr. R. N. Harris, of Florence, Ala., is the owner, is a sand mound about one mile from the upper end of the island, near its northern side, in sight from the water, did not trees intervene. The mound, about circular as to its base, has a diameter of 60 feet; its height, taken from the outside, around which depressions made it difficult to do with accuracy, was slightly more than 6 feet.

From the northern side of the mound is an extension 34 feet long to where it joins the mound, and 44 feet in width. This extension does not slope upward to the top of the mound, but joins it about midway, where its height is 3 feet.

There had been some previous digging in this mound, but the holes had been of inconsiderable size and comparatively shallow. An excavation by us, 14 feet square, came to light-yellow sand at a depth of 5.5 feet, differing considerably from the darker sand of the mound, and though the digging was carried to a depth of 7 feet and to 8 feet in places, no distinct basal line was seen. Presumably the different colored sand was the underlying soil.

Burial No. 1, disturbed fragments of bones near the surface.

Burial No. 2, 14 inches down, remains of a skull and a femur lying together. With these was a mass of galena (lead sulphide) about the size of a woman's fist, rounded as by grinding, and two vessels of very inferior ware, as were all from this mound, one an undecorated pot, the other belonging to a class found in northern Alabama, of which we are showing numerous examples (Fig. 32).

¹ To avoid confusion it may be well to say that a mound on Tick Island, Florida, has been investigated and described by us.

Burial No. 3, two femora not in order, with an undecorated pot having two loop-handles.

Burial No. 4, three feet down, fragments of a skull and part of a femur together. With these were an undecorated pot and one having two small, horizontal, opposite extensions from the rim.

Burial No. 5, fragments of crowns of teeth in a grave whose base was 6 feet 6 inches deep, filled in with the dark sand of the mound. With the teeth was



FIG. 32.—Vessel of earthenware. With Burial No. 2. Tick Island, Ala. (Height 6.2 inches.)

a celt (which was presented to the owner of the mound), 8 inches long and, like nearly all the celts from this region, carelessly ground, having depressions that for neatness of appearance should have been obliterated.

A considerable number of objects were taken from the mound, having no burial in association, though presumably most of them had been with bones that had decayed away. A well-preserved, spool-shaped ornament of copper, around the central part of which was a cord preserved by the deposit of carbonate on the metal, lay in the sand near a former digging. Three agricultural implements of shale, the largest somewhat more than one foot in length, were found

separately, as were three earthenware vessels, broken, like all from this place, two of the class having oblique extensions and loop-handles with knobs, one of which is shown in Fig. 33, and one a small, undecorated bowl.



FIG. 33.—Vessel of earthenware. Tick Island, Ala. (Height 5.3 inches.)

Together and certainly a mortuary deposit whose burial had gone through decay, 5 feet deep, were twenty-five masses of galena, some rounded, the largest about the size of a goose-egg; two fragments of flint; several masses of clay, not pure clay such as we often see described in this report in connection with burials, but having a considerable admixture of sand.

Four slabs lay together near the surface of the mound and evidently had been disturbed by previous digging, an unfortunate occurrence, for if a stone grave had been present in this region it would be interesting to know it.

An excavation 10 feet square, in the extension, came upon traces of a skull near which were traces of femora and tibiae in order, all in a position indicating a flexed burial. On the base, 3 feet 10 inches deep, were traces of a skull and of other bones. Above the skull lay a very rude, agricultural implement of shale, 1 foot 4.5 inches in length and 5.25 inches wide. With it were two fragments of flint.

MOUNDS ABOVE NANCE'S REEF, LAUDERDALE COUNTY, ALABAMA.

About one-half mile above Nance's Reef, one of the most dangerous parts of Tennessee river, on property belonging to Mr. W. F. Harrison, who resides on it, is a mound on high ground, in full view from the river, about 110 feet across its base of irregular outline, and 8 feet 9 inches high. This mound, mainly of clay, had been plowed over for many years, making it hard to determine what its original shape had been. Seemingly, however, it had belonged to the domiciliary class.



FIG. 34.—Vessel of earthenware. Sycamore Landing, Ala. (Height 5.1 inches.)

The mound, at the time of our visit, was covered with growing wheat, but arrangements were made to put down a hole 10 feet square. The excavation, however, was abandoned before the base was reached.

About one-half mile easterly from this mound is a low rise largely of shell, which we did not investigate.

MOUND NEAR SYCAMORE LANDING, LAWRENCE COUNTY, ALABAMA.

Almost at the water's edge, in full view from the river, about .4 mile above Sycamore Landing, is a mound on property of which Mr. J. H. Gilchrist, of Courtland, Ala., is owner. The mound, 6 feet 8 inches high, with diameters of 65 and 75 feet, evidently has been quadrilateral and still has a flat top—doubt-

less a domiciliary mound. About centrally an excavation 10 feet square was put down, reaching a dark line 7 feet deep over undisturbed, yellow sand. Traces of two skulls were found separately, somewhat less than 2 feet down. With one was a vessel in fragments, of a kind found by us in this region, which, put together, and restored somewhat, is shown in Fig. 34. The ware is thick and coarse.

About 3 feet down were remains of a flexed burial with which was a large fragment of an undecorated vessel of earthenware. A small pot without ornamentation was found apart from bones.

We note in this mound no burials lower than 3 feet and conclude it to have been a domiciliary mound having superficial burials.

DWELLING-SITE ON GILCHRIST ISLAND, LAWRENCE COUNTY, ALABAMA.

On Gilchrist Island, on property belonging to Prof. J. H. Patterson, of Nashville, Tenn., about midway as to the length of the island and near its southern side, in a cultivated field that is comparatively level and shows no trace of midden debris, is a hump 195 feet by 305 feet, approximately, in basal diameters and about 7 feet in maximum height. This hump is superficially covered with dark soil greatly differing from that of the surrounding field, and having sprinkled through it fragments of musselshells and quantities of periwinkles (*Campeloma ponderosum*). About 2 feet down our trial holes came to almost solid shell, encountering disturbed human bones near the surface in one instance, and a disturbance about 20 inches down, evidently not due to cultivation of the field. This site is similar to that near Milton Bluff, to be described next in this report, and belongs to a class that seems to offer little inducement to the investigator.

DWELLING-SITE ABOVE MILTON BLUFF, LAWRENCE COUNTY, ALABAMA.

About one mile above Milton Bluff and 200 yards from the water is a mound in a cultivated field on property belonging to Miss Lucy L. Wheeler, of Wheeler, Ala. This mound, rising from level, bottom land, is said to have bordered the river within memory of man, the intervening ground having formed in comparatively recent years. The height of the mound is about 9 feet, its basal diameters 180 feet and 335 feet, approximately. Its surface was thickly strewn with shells and fragments of stone.

Eight trial-holes showed the first two feet of this mound to be of midden soil, below which was a mixture of earth, musselshells, and *Campeloma ponderosum*, a univalve, closely packed. Digging through this material made slow progress. Four burials were discovered as follows: scattered bones near the surface; adolescent closely flexed on the right, about 3 feet down; a child at a depth of 22 inches; adult closely flexed on the left, nearly 4 feet deep.

As our deepest hole was but 5 feet 3 inches and still in masses of shell, we cannot say if this mound was in part natural or wholly artificial. Probably,

however, as the ground surrounding it was level, alluvial land, the mound was a mass of shell down to the surface of the field and not a shell-heap on an eminence.

A thorough examination of this shell-heap would require far more time than its character and the probable absence of artifacts with the burials would justify. In the digging were found several rude knives of flint, an axe 4 inches in length, having a double groove, the poll, unfortunately, somewhat broken.

On the surface were several knives or arrowheads, of flint, and an agricultural tool of limestone, about 8.5 inches in length.

About one-quarter mile distant from this shell mound, on high ground farther in from the river, is what is believed to be a mound by those residing nearby, but which our agent reported to be in reality a natural ridge.

MOUND ON BROWN'S¹ ISLAND, LAWRENCE COUNTY, ALABAMA.

At the upper end of Brown's Island (and we several times have occasion to note that a number of islands in Tennessee river have mounds so situated), which also is called Knight's Island, its owner being Mr. John W. Knight, of Decatur, Ala., is a mound quadrilateral with flat top, somewhat rounded in outline. Its height is 9.5 feet; it is about 90 feet square.

An excavation 10 feet square reached scattering shell at a depth of 9 feet and came to undisturbed, yellow sand six inches deeper. Probably the mound had been built on a dwelling-site. At one place, the dark, loamy sand of which the mound was composed continued down mingled with shell to a depth of 12 feet from the summit, or about 2.5 feet into the undisturbed sand. There was not the appearance of a pit at this place, it seeming rather as if the mound had been built on a rolling surface, such as the ground is today through wash of water when the river is high, and that the lower level had been raised with midden soil to the general level and then the mound carried upward from that. Nothing in the way of bones or of artifacts was found or expected in this domiciliary mound.

DWELLING-SITE AT BROWN'S FERRY, LIMESTONE COUNTY, ALABAMA.

At Brown's Ferry is a large property which belonged to the late Henry Warten, of Athens, Ala., who most kindly had placed his twelve thousand acres of land along Tennessee river at our disposal.

On high ground just back of the bottom land at this place was a large, aboriginal dwelling-site, on the surface of which were shells and fragments of stone. Most of this site, unfortunately, at the time of our visit was covered with growing oats. In certain parts of the site not under cultivation, digging at random (there were no rises to indicate where investigation might be rewarded) was attempted

¹ This name has been selected because it is employed in the "Index Map of the Tennessee River, Survey of the Middle Section, House Document No. 360." The island, however, is also well known as Birkett's Island and Robinson Island, names of former owners.

without success and with but little encouragement as the midden soil was of inconsiderable depth.

DWELLING-SITE ON MASON ISLAND, LIMESTONE COUNTY, ALABAMA.

About 200 yards below the upper end of Mason Island, which is about four miles long, on property of Mr. J. Greer Mason, of Athens, Ala., is a landing where, on the border of a cultivated field near the river, is an aboriginal dwelling-site of small proportions, marked by the presence of shells on the surface.

At the upper end of this site is a slight rise of irregular outline, about 60 feet by 75 feet in extent, containing much shell, loosely packed, however, and comparatively easy to dig. The maximum depth of the shells and midden soil was about 3.5 feet.

This rise was almost completely dug through by us, yielding fifty-two burials, of which twenty-two were of infants or of older children. The adult and adolescent burials, with one exception, the skeleton of an adult extended on the back, were all in some form of flexion, wherever it was possible to determine. There had been, however, much disturbance caused by intersecting burials. No interments were found at a depth greater than 38 inches, except in the case of a grave which will be described in due course. Undisturbed alluvial soil was reached about 3.5 feet down.

The description of all burials accompanied by artifacts is given in detail.

Burial No. 3, a disturbance. At the feet was a barrel-shaped object of limestone, sometimes called an anvil-stone, 3.4 inches in height and 3.5 inches in maximum diameter. This particular stone, however, can hardly have been used where blows were struck, as the symmetrical depression at each end is smooth, in fact almost polished.

Burial No. 4, adolescent, the bones somewhat disturbed. At the pelvis, together, were: a celt of indurated shale, 2.4 inches in length; a pebble about 5 inches long, resembling a celt in shape; a pebble circular in outline; a commonplace pipe of earthenware, having a band of notches encircling the opening.

Burial No. 5, a disturbance. Near the skull was an undecorated pot having two loop-handles.

Burial No. 6, partly flexed on the right. Standing in front of the thorax (the burial, of course, lying on its side) were a bowl and a bottle without decoration, and a pot having a very rude, cross-hatched, incised design around the neck. The skull of this burial, which lay at a depth of 2 feet, was saved.

Burial No. 8, partly flexed on the left, 32 inches down. Near the skull, which was saved, was a small bowl having had as an ornament an effigy of a head projecting vertically.

Burial No. 9, partly flexed to the right. Near the skull were an undecorated bottle having a flat, projecting base; an undecorated pot having two loop-handles; another pot also with handles, having a rude line and punctate decoration on the body.

Burial No. 12, a young child. A stain from a salt of copper was on the face. This skeleton lay with that of an adult, the skull of the child at the knees of the other burial and directed toward the feet.

Burial No. 16, partly flexed on the left. An ear-plug of the pin-shaped variety and of considerable length lay at each side of the skull, at the right of which was a rude pot having two loop-handles, and coarse, lined decoration on the body. Near the top of the head was a vessel in fragments, having had four equidistant knobs around the opening. Near the chin was a shell gorget, scal-



FIG. 35.—Earthenware vessel coated with carbonate of lime. With Burial No. 16. Mason Island, Ala. (Height 8 inches.)

loped and bearing a triskele design on one side, rather carelessly executed. Alongside the left shoulder was an undecorated pot having two loop-handles and containing a pair of spoons carved from musselshells.

At the outer side of the left humerus stood a bottle having a spherical body, the base flattened, 8 inches in height and 9.6 inches in maximum diameter (Fig. 35). The neck of this bottle, having a diameter of 3.1 inches, apparently had been broken off in part, and the remainder, .8 inch in height, had been smoothed along the line of fracture. Probably but little of the neck had been lost, however, as a bottle similar in shape, having a comparatively short neck, was found at

this place later in the investigation. On this bottle with Burial No. 16 is a white coating which is not kaolin, the pigment used on most vessels having a decoration in white, but proves to be carbonate of lime.

Somewhat farther up Tennessee river, with Burial No. 53, Mound A, the Roden Mounds, was a small mass of white material which evidently had been interred with the burial as an offering. This material was determined to be calcium carbonate, carbonate of lime, and practically the same as found by us on the bottle. Referring to the deposit in the Roden Mound, Doctor Keller writes:

"I have examined the lump of calcium carbonate and find that it is more dense and distinctly harder in the interior. Whether the soft, chalk-like layer on the outside is the result of weathering or due to the action of heat and subsequent absorption of carbonic acid is difficult to determine.

"As there is no sharp line of demarcation I rather incline to the belief that the alteration was caused by atmospheric action."

To digress a moment, we have spoken, in connection with this burial, of ear-ornaments like large pins in form. We are inclined to believe that these pin-shaped objects were all ear-ornaments, as we know some of them to have been, and that those having long shanks were passed through the lobe of the ear, the shank being held in place by masses of hair. These pin-shaped ornaments of shell, of whatever size they may be, are almost invariably found in pairs, one at each side of the skull, unless there is evidence of disturbance in connection with the burial. Moreover, some of them have a groove immediately back of the globular head, which evidently is intended to accommodate the lobe of the ear. However, it is possible some of the longest ornaments of this shape may have served as pins in the hair, though we have found even this form in place at each side of the head of a burial.

And now to return to the burials.

Burial No. 17, a child. At the neck and extending down the body were ten massive shell beads and one small one, all well preserved, the largest 1.3 inch in length and 1.1 inch in maximum diameter. Near the skull was a celt of indurated shale 4.4 inches in length.

Burial No. 19, a child. Under the right elbow lay a bicave stone of quartz slightly less than 2.5 inches in diameter, having an interesting feature sometimes noticed in these stones in that each side may be said to have a double depression, the main ones having centrally each a smaller one about fitted in size to accommodate a finger tip. Probably this stone was rolled by a juvenile player in the game of chungkee, as the children of the Wedaun people of New Guinea¹ hurl spears and sharpened sticks at a cocoanut rolled along the ground. The course of this chungkee-stone would be slightly erratic, however, the stone being somewhat asymmetrical, a fact which might add interest to the game.

¹ Henry Newton, "In Far New Guinea," p. 63.

Burial No. 21, an infant. Near the skull were five shell beads and two shell ear-plugs of the pin variety, each .9 inch in length. One of these minute ornaments was found in place, but the other, disturbed by a blow of a spade in its neighborhood, required work with a sieve for its recovery.

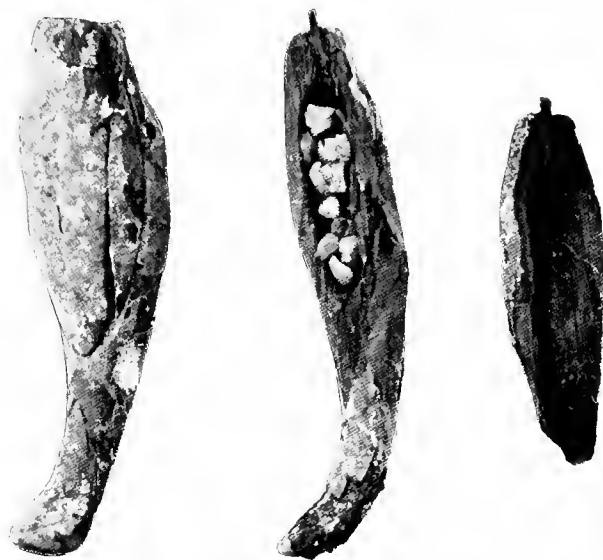


FIG. 36.—Ornaments of wood, copper-coated. With Burial No. 22. Mason Island, Ala. (Full size.)

Burial No. 22, a child. At the feet were two hollow, wooden ornaments, copper-coated, containing small pebbles, shown in Fig. 36, one open, the other as found.

Mr. Charles C. Willoughby considers these ornaments to be representations of the pod of the milkweed plant. This type of ornament was found by us in the mound on the Bennett Place, below Chattanooga, and also in a mound in Arkansas. Herewith is given a note on the subject of ornaments of this class, kindly prepared for this report by Mr. Willoughby.

"Dear Mr. Moore: In the Peabody Museum of Harvard University are two pairs of ear pendants similar to those of which you send photographs; they are, however, without expanding tips. Each pendant of the first pair is perforated near the larger end, and closely resembles the one obtained by you from a mound in Calhoun Co., Arkansas, and which you figured on page 93 of the report of the Antiquities of the Ouachita Valley. They were obtained by Mr. Edwin Curtis in 1878 while working for the Museum, and are described and illustrated on pages 112–113, volume III, of the Peabody Museum Reports. Professor Putnam says: 'They are made of wood which, after being carefully shaped and smoothed, was split lengthwise for the purpose of making a symmetrical and smooth oval cavity. . . . In the cavity small pebbles of quartz were placed, . . . which would give a slight jingling sound as the head of the wearer was moved about. The two pieces were then put together and held in place

by a covering of very thin plates of copper, which were firmly united by pounding and rubbing until an even and smooth surface was secured. Through the upper end a hole was made by which the pendant was fastened to the ear.' These were found, one on either side of the skull of a skeleton, in a stone grave mound, Harpeth River, central Tennessee. At the time that the above description was written, but one of the pendants had been opened. This had probably been done in the field by Mr. Curtis. Noticing that the ornament represented the seed pod of some species of the genus *Asclepias* I opened the other specimen with the result shown in Fig. 37, where the ornaments are pictured with a pod



FIG. 37.—Pair of ear-ornaments. Harpeth River, Central Tennessee. To the right, pod of *Asclepias cornuti*. (Full size.)

of *Asclepias cornuti*. As will be seen, the pebbles, which represent the seeds, are carefully placed in position just within the walls of the pod, upon a mass of fiber, which fills the remaining space in the cavity. The fiber undoubtedly represents seed down, which is especially conspicuous in the milkweed. This fiber is now of a deep brown color. It may have been from the stalk of the *Asclepias*, the fiber of which was used for cordage, although less extensively than that of *Apocynum*. The milky juice of this plant was used by some of the California Indians to make the pattern of tattoo marks on the skin, and to hold the soot while being pricked into the surface. Unfortunately but little is known of the ethno-botany of primitive America, and the extent to which various plants entered into the ceremonial life of the Indians can only be surmised. It is probable, however, that some mystic significance was attributed to the milkweed and that these pendants embodied that power.

"The second pair of ear ornaments in the Peabody Museum are shown in Figs. 38, 39. They formed a part of the collection of the late Dr. George

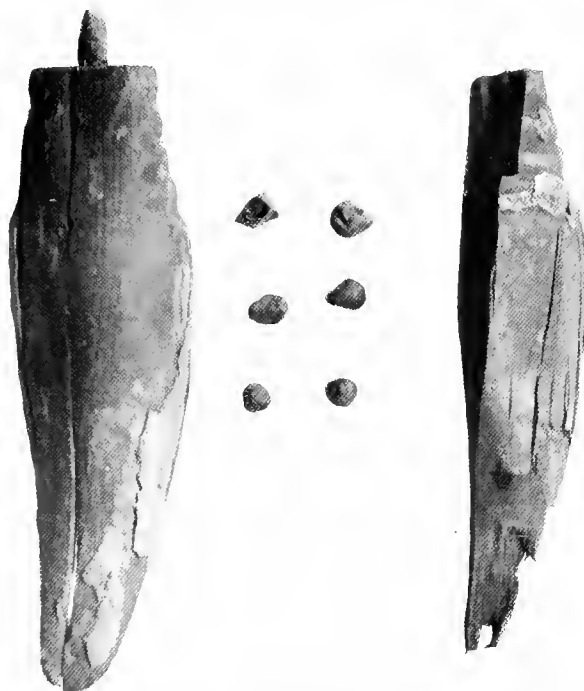


FIG. 38.—Ear-pendants from burial at Letterman, Ark. (Full size.)

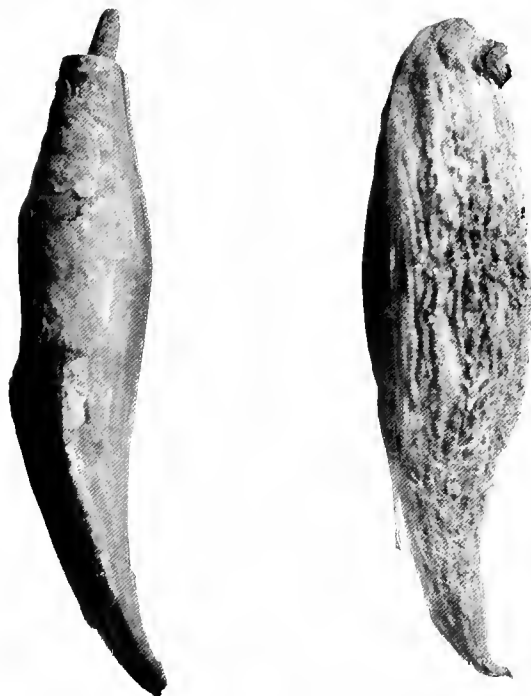


FIG. 39.—Side view of pendant from Letterman, Ark., and side view of a pod of *Asclepias cornuti*. (Full size.)

J. Engelmann and were obtained from a burial at Letterman, Arkansas. Both had been opened and their contents lost with the exception of six pebbles. The wooden portion of one of these ornaments is in an excellent state of preservation and is a beautiful example of working in wood by primitive processes, the walls surrounding the inner cavity being only about one sixteenth of an inch in thickness. The sheet copper which encased the wood has corroded and nearly all flaked off. It will be noticed that a wooden plug is inserted in a hole at the larger end and represents the stem, a feature also present in the pendants secured by you at Mason Island, Alabama.

"The pods of the 40 or more species of *Asclepias* found within the United States vary considerably in size and shape. Some are long and slender, others are short and thick. In looking over the collection in the Gray Herbarium of Harvard University I found none with expanding tips corresponding to the

form shown in the pendants from Mason Island. This feature may have been exaggerated in the ornament. It is possible, however, that the Mason Island specimen may represent the pod of a different plant, the nature of which is unknown to me."

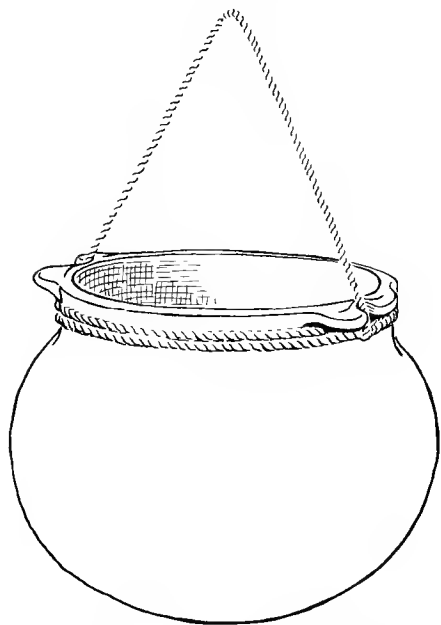


FIG. 40.—Showing method of suspension.

Burial No. 23, partly flexed on the right. At the right shoulder was a pot having four equidistant, horizontal projections from the rim, which would serve to keep an encircling cord in place, while back of the trunk was a pot, undecorated save that two opposite projections were present at the opening, extending horizontally. In each of these projections a space is present through which a cord attached to one enclosing the neck could pass vertically (Fig. 40). A considerable deposit of soot is on the body of this vessel, which fact might indicate that the vessel sometimes had

been placed on a fire and sometimes suspended when cooking was not in progress, for if suspended over a fire presumably the cord would risk destruction. At the knees of the skeleton was a pot having two loop-handles, and four lobes around the body (Fig. 41), which is shown not on account of any excellence possessed by the vessel, but to illustrate the pottery of the region.

Burial No. 24, an infant. At the cranium lay a vessel from the rim of which were numerous horizontal projections.

Burial No. 26, partly flexed on the right. In front of the thorax had been placed a rude, undecorated pot.

Burial No. 28, adolescent, partly flexed to the left. At the skull, together, were a pot with two loop-handles, and a bowl having an effigy of an animal's head rising from the rim, a conventional tail being on the opposite side.

Burial No. 29, a child. At the head was a pot having two loop-handles. On the thorax, with two shell beads, was a scalloped, shell gorget having two perforations for suspension and on the concave side two concentric circles, the outer one being in line with the perforations. Below the gorget was an ornament of the pin-shaped variety. An undecorated bottle, 8.3 inches in diameter, having a wide neck 1.1 inch in height, was at the pelvis. As a rule in this site the vessels of a size for use by adults had been placed with burials of children, which usually is not the case elsewhere.



FIG. 41.—Vessel of earthenware. With Burial No. 23. Mason Island, Ala. (Height 3.8 inches.)

Burial No. 32, closely flexed on the right. At the head was a pot having knobs around the opening, and containing a small pot having had two loop-handles, one of which was missing.

Burial No. 33, a child. On the side of the head was a pot having two loop-handles, and inside it a shell spoon and two flat beads made from a very thick musselshell, one of which broke into flakes on removal. On the opposite side of the head was an undecorated bottle having a wide mouth. Also near the head, where probably it had fallen from the thorax, was an undecorated gorget of shell. In position at the neck, where most likely they had been attached to the gorget, were a number of shell beads and two small, baroque pearls, pierced for stringing. At the feet was an undecorated pot having a pair of loop-handles. This vessel was badly broken, as were nearly all the earthenware vessels found at this site.

Burial No. 34, closely flexed on the back. At the left shoulder was a bowl having a crimped decoration at the margin, inside of which was another bowl

having the head of a bird and a conventional tail on opposite sides by way of decoration. At the left humerus was a bowl with a beaded margin. An undecorated bottle in fragments and a large pot lay along the left shoulder and elbow.

Burial No. 35, a child. Small shell beads were at the neck, and at the right side was a pot having two loop-handles, knobs being on the handles and around the margin of the vessel, in which were two spoons carved from musselshells.



FIG. 42.—Vessel of earthenware. With Burial No. 49. Mason Island, Ala. (Height 6.6 inches.)

Burial No. 37, partly flexed to the left. At the right shoulder was an undecorated pot having two loop-handles. The skull of this burial was saved. Judging from the appearance of the bones at this site, their condition was excellent, but a kind of dry rot seemed to have affected them and comparatively few were in a condition to save.

Burial No. 38, a child. On the thorax was a small conchshell (*Busycon pyrsum*), its beak toward the chin of the skeleton, it evidently having hung in that position with the aid of a small perforation at the end of the beak. With it was a shell spoon.

Burial No. 39, closely flexed on the right, in a grave elliptical in outline, 3 feet 10 inches long by 2 feet 10 inches in maximum width and 4 feet deep, was a skeleton without accompanying artifacts, details of whose burial we include as it was the only unmistakable grave found in the site.

Burial No. 40, closely flexed to the left. At the left of the skull was a bowl having had the effigy of a head rising from the rim and a conventional tail on the opposite side. With this was a pot having four horizontal projections from the rim. The skull of this burial was in condition to keep.

Burial No. 41, partly flexed to the right. At the pelvis was a large bowl, a cooking vessel covered with soot, having four horizontal projections near the rim, ornamented with small notches on the outer margins.



FIG. 43.—Vessel of earthenware. Mason Island, Ala. (Height 4.1 inches.)

Burial No. 42, partly flexed to the right. At the right humerus was a discoidal of jasper breccia, 3.5 inches in diameter. This stone has an effective appearance, not through excellence of treatment but owing to its component parts, some of which are yellow, others red, the setting of all being chocolate in shade. At the right elbow was a discoidal of limestone, 2.5 inches in diameter.

Burial No. 45, closely flexed to the left. At the left shoulder and elbow was a large pot having a number of horizontal projections around the rim, and another pot decorated in the same way with knobs.

Burial No. 49, a young child. At the pelvis was a vessel having two projections from the rim at opposite sides, under each of which was a loop-handle. Around the upper part of the vessel are four encircling, parallel rows of knobs (Fig. 42). This vessel belongs to a class which, as we have before said, seems to be frequently met with in northern Alabama.

In the digging, away from bones, were: a vessel of earthenware (Fig. 43); ten arrowheads and knives of flint, found singly, four of which are triangular

in outline; a disc of wood, copper-coated, 1.9 inch in diameter, evidently part of an ear-plug; the skull of a dog; a bone of a turkey; several piercing implements of bone; part of an antler smoothed at both ends, possibly intended for a handle; a discoidal of quartz, 3 inches in diameter; a graceful lancehead of flint, 3.75 inches in length.

A pit of considerable size, traceable from the surface down, filled with shells and some midden soil, probably had been in use for refuse. At all events no bones were present in it.

Digging in other parts of the site was without success, no place being found where the midden soil was of any considerable depth.

MOUND ON THE STEEL PLACE, LIMESTONE COUNTY, ALABAMA.

On a property said to belong to Mr. Arthur Steel, residence unknown, is a mound a few yards from the landing, about 12 feet in height. This mound, which evidently has been a domiciliary one, has been cut away in part to permit the erection of a building. We were informed by a tenant that nothing had been found at the time of the partial demolition of the mound. A short distance from this mound is a small one, evidently much worn away, on which is a building. No digging was done by us at this place.

MOUND AT DECATUR, ALABAMA.

In the yard of the H. H. Hitt Lumber Company, of Decatur, Ala., is a mound somewhat the worse for time, about 10.5 feet in height and approximately 80 feet and 95 feet in diameters of base. The mound evidently had belonged to the domiciliary class, and although Mr. Hitt, president of the company, placed it at our disposal, we decided, under the circumstances, it would be inexpedient to dig into it, as mounds of this kind, as we so often have had occasion to say, rarely yield any return.

MOUND AND DWELLING-SITE NEAR SOUTH FLINT RIVER, MORGAN COUNTY, ALABAMA.

On the river bank, about 100 yards above the mouth of South Flint river, on property belonging to Mr. J. B. Gilchrist, of Courtland, Ala., was a mound 5 feet in height and 45 feet across its base, which was about circular. This mound had been dug into previous to our coming, but though the hole, which was central, had been of considerable size at the surface, it converged suddenly and before reaching the base of the mound was of insignificant proportions.

An excavation 16 feet square was put down by us, showing the top of the mound to be 6 feet 3 inches above the base, which consisted of 2 or 3 inches of very dark midden soil, beneath which was a solid deposit of shell, no doubt part of the dwelling-site which was contiguous to the mound. The mound itself was of raw clay without any admixture of organic matter. In the upper two feet of the mound, in addition to loose bones thrown out by former diggers,

three burials of children and one of an adult were encountered, none at a depth greater than slightly more than 2 feet.



FIG. 44.—Bottle of earthenware. Near South Flint River, Ala. (Height 8.2 inches.)

Only a few inches from the surface, apart, were two vessels—one, undecorated, having a short neck, the other, a graceful bottle, its body consisting of four lobes. This vessel, of fairly thin ware in which a small proportion of shell-tempering is apparent, has had a uniform coating of red paint over the

body (Fig. 44). Though no interments were found near these vessels, it is probable they had been with human remains, as both were near the edge of the former digging.

Throughout the rest of the mound, to the base, no burials were met, nor was any artifact encountered with the exception of part of a large axe, apparently of claystone, the posterior part of which was absent, and a rude knife of flint found on the base. No pit extending below the mound was discovered.

Immediately adjacent to the mound was a small dwelling-site which, to some extent, had been cut away by the river that had left exposed parts of human skeletons in two places. Quantities of broken stones, quartzite and flint, lay along the shore, with which was an occasional arrowhead. On the surface of the site, which offered no indication in the way of a rise where digging might be successful, a few arrowheads were gathered, all with stems, some having barbs. Pottery of fairly good quality was either undecorated or bore a check or a cord-marked design.

A limited amount of digging in this site soon came to a thickly-packed deposit of shell where work progressed slowly, and it seemed hardly worth while, under such conditions, to devote a long period to finding, at most a few burials with which, in all probability, nothing had been deposited.

MOUND NEAR LIMESTONE CREEK, LIMESTONE COUNTY, ALABAMA.

In a cultivated field bordering Limestone creek and in sight from its bank, about 1.5 mile back from the union of the creek with the Tennessee, is a mound on the property of Mr. J. E. Penney, of Birmingham, Ala., who most cordially placed all his various properties along Tennessee river between Florence, Ala., and Chattanooga, Tenn., at the disposal of the Academy for investigation.

The mound, about circular as to its base, had been somewhat spread by cultivation; its diameter was 55 feet. The height of the mound was hard to determine, as it was in part on the verge of, and partly on, a slope, so that its height depended largely on the point from which the measurement was made. From the level of the crest of the slope the mound had a height of 4 feet 8 inches, but later a measurement showed the base to have been slightly more than 6 feet below the summit of the mound.

An excavation 16 feet square, which later was much enlarged in places, was put down, showing the composition of the mound to be of dark, midden soil, almost black as a rule, though near the surface in one part there seemed to be a mingling of clay somewhat lighter in shade.

Thirty burials were encountered, all of which, with one exception, where a quantity of disconnected bones had been interred, were of the flexed form of burial or at full length, so far as could be determined. In the body of the mound especially there had been great disturbance, burials cutting through other burials, leaving parts of skeletons only. Single skulls were encountered also and were classed as burials.

In addition to several burials on the base of the mound, ten graves extended below the base, three of which contained two burials each. The following interments present features of interest in connection with their method of burial or had artifacts with them.

Burial No. 6, an aboriginal disturbance having enough remaining to show the body had been at full length on the back. On the pelvis, its long axis corresponding with that of the body, was an agricultural tool of shale, 1.5 foot in length, neatly rounded at both ends, which were 5.25 and 3 inches in width, respectively, the greater width being ground to a fairly sharp edge.

Burial No. 15, the skeleton of a child, lying at the bottom of a grave 3 feet long and 1 foot 10 inches wide, 6 feet from the surface, the grave extending 1 foot 4 inches below the base. At the neck were two thick, discoidal beads of copper.

Burial No. 16, a skeleton extended on the back, the bones of the left forearm missing. Corresponding bones of a left forearm, doubtless the missing ones, were in the soil about one foot above the burial, which lay at the bottom of a pit extending about 2 feet below the base, 8 feet long and 1 foot 10 inches wide. In the grave, beyond the head and the feet, respectively, were single masses of pure clay. In front of the face, which was turned to the right, was a knife or lancehead of flint, 2.8 inches in length. Beyond the skull was a celt of indurated shale, 9.1 inches long. To the left of the pelvis lay a mass of galena, somewhat smaller than a man's fist.

Burial No. 18. About the center of the base of the mound and in contact with Burial No. 19, with whose grave No. 18 formed a right angle, was a skeleton extended on the back in a grave distinct in the red, undisturbed clay (as were all the graves in this mound), 7 feet long by 2 feet 4 inches in width and extending 2 feet below the base. At the head was a mass of pure clay, and four small bits of galena lay together at the right of the pelvis.

Burial No. 19, the skeleton of an adolescent, lay at full length on the back at the bottom of a grave-pit 5 feet 8 inches long by 1 foot 9 inches in width at the end in which the head of the skeleton lay, the foot end of the grave being 1 foot 5 inches across. This pit extended 1 foot 4 inches below the base of the mound.

Immediately on the skeleton and in contact with the limits of the grave on all sides, was a layer of pure, light yellow clay from 2 to 3 inches in thickness, which contrasted markedly with the dark clay of the soil around it, as shown in the illustration (Fig. 45), where the parallelogram is clearly noticeable. At the neck of the skeleton were a few shell beads, badly decayed.

Burial No. 20, a skeleton at full length on the back, in a grave 6 feet 4 inches long by 1 foot 5 inches wide and extending 2 feet below the base, had a mass of clay at the head and another at the feet. In the same grave, its skull 6 inches above the knees of Burial No. 20, was the skeleton of a child (Burial No. 21) lying in reverse direction to the burial beneath.

Burial No. 23, a skeleton extended on the back, in a grave similar to others in the mound, had, beyond its feet, a mass of pure clay extending across the grave.



FIG. 45.—Burial No. 19, a skeleton on the bottom of a grave-pit. The grave was 5 feet 8 inches long and 1 foot 9 inches wide. The bones were covered with a layer of pure clay, as shown. Limestone creek, Ala.

Burials Nos. 24 and 25, a grave 2 feet 3 inches long by 1 foot 8 inches wide, reaching 2 feet 2 inches below the base, contained the bones of an adult and of a child in no order whatever. With this burial were four shell beads, one, one inch in length, the other three each about .4 inch long. There were also two sections of columella, one, .75 inch in length, bored at both ends but without

perforation, and a somewhat shorter section in which no boring had been attempted. With these also were five sections of the body-whorl of a large marine shell, and a pendant from the body-whorl of a similar shell, somewhat less than 3 inches in length, having a groove for suspension at one end and a part broken from the other extremity.

Burial No. 29. This skeleton, extended on the back, lay well out from the center of the mound and beyond our original excavation, at the bottom of a grave 8 feet 7 inches in length and 2 feet wide at the base, where it expanded slightly. From the surface of the slope of the mound to the bottom of the grave was 10 feet 10 inches, the pit extending 6 feet 10 inches below the base. Well up in the grave lay a skull, and other bones were scattered around, showing this deep grave had cut through one or more graves which had preceded it. The burial at the bottom of this grave was covered with a layer of light-colored clay having a maximum thickness of 5 inches. On the upper surface of this layer was the skeleton of a child about 8 years of age, the head in the same direction as that of the skeleton beneath.

With several parts of skeletons in this mound, aboriginal disturbances, were masses of pure clay.

Apart from bones, singly, were found eight arrowheads or knives, of flint, all with stems, some barbed, two serrated. One of these latter was of interest from the fact that part of its pointed end having split away, the remainder had been serrated along the line of fracture to continue the point in use (Fig. 46).



FIG. 46.—Arrow-head of flint, showing secondary work. Limestone Creek, Ala. (Full size.)

There was also in the mound, probably in the midden debris, the jaw of a dog.

All over the field in which the mound was, but in increased numbers in its vicinity, were quantities of pebbles and fragments of stone, much of which was flint, also arrowheads or knives in considerable numbers, some complete, many broken. In addition were picked up at this site a muller of limestone, a celt of claystone, and several rude implements of flint. The arrowheads from this place do not include any small, triangular ones, and as a rule are stemmed, sometimes barbed and, with one or two exceptions, exhibit little evidence of careful workmanship.

On the upper side of Limestone creek where it joins Tennessee river, in view from the waters of both, is an earthwork in the form of a four-pointed star surrounded by a ditch. This earthwork, which the older inhabitants remember to have been thrown up in the Civil War, has deceived the uninformed, who have dug into it extensively.

DWELLING-SITE ON THE HOPPER PLACE, MADISON COUNTY ALABAMA.

Opposite Bluff City, on property belonging to Mr. W. M. Hopper, who lives somewhat back toward the hills, is a large field bordering the river, having

a sprinkling of shells over most of its surface, and a number of slight rises near the water, on which were more shells than elsewhere in the field. Artifacts were singularly few on the ground, almost nothing being found other than a few small fragments of pottery, one of which had a coating of red pigment.

Considerable digging at this place yielded neither burial nor artifact.

DWELLING-SITE NEAR CATACO CREEK, MORGAN COUNTY, ALABAMA.

On the lower side of the mouth of Cataco Creek, known also as Tate Creek, are a dwelling-site and an aboriginal cemetery of importance, according to our agent who visited them, which are under the management of Mr. J. W. Dunaway, of Sommerville, Ala. Permission refused.

MOUNDS ON THE SLAUGHTER PLACE, MORGAN COUNTY, ALABAMA.

On the property of Mr. H. B. Slaughter, of Chicago, Ill., of which Mr. John Millow, who lives on the place, is manager, in a cultivated field were two mounds but a few feet apart, about one-quarter mile SW. from the landing. These mounds, blunt cones and symmetrical, were on land that had lately been cleared and were covered with the stumps of large trees. Evidently with the exception of a shallow hole in the top of the larger mound, they had not been dug into prior to our visit. Both mounds were of dark clay, of rather raw appearance, without admixture of midden debris.

MOUND A.

Mound A, 7 feet 10 inches in height when measured from the outside, and 50 feet in diameter of base, was dug centrally by us to the extent of an excavation 16 feet square which showed the base of red clay, very distinct from the clay of the mound, to be 7 feet 2 inches from the summit.

Two feet down was a deposit of pure, gray clay differing entirely from that of the mound, 4 feet long by 16 inches wide and 2 to 3 inches in thickness. At one end of this were grouped together twenty-five masses of galena (lead sulphide), the largest 2.5 inches by 1.5 inch by 1.25 inch. Beside these lay a copper celt 4.4 inches in length and 2.5 inches across the blade. Most careful search for traces of bones was made in connection with this deposit, but not even crowns of teeth were discovered, though without doubt a burial had been there.

In the wall of the excavation, 54 inches down, together, were a mass of galena weighing fourteen pounds and an interesting celt of copper, 4.4 inches in length and 2.5 inches in maximum width, flat on one side and convex on the other. If traces of bones were with these objects not any were noticed in the disturbance, the lead and the copper having been dislodged by a blow of a pick before their presence in the wall was known. However, careful investigation showed that no fragments of bone other than possibly very small ones accompanied them.

Apparently exactly in the center of the base of the mound, was a grave, a blunt oval in outline, 7 feet long by 5 feet in maximum breadth, very distinctly defined. This grave, whose sides did not converge, extended 3 feet 4 inches into the undisturbed, red clay. When the grave was dug the red clay had been thrown out around it and apparently had not been used in filling it, as the contents of the grave consisted of the dark clay of the body of the mound.

In the wall of the grave, on one side, were four small offsets which did not extend to its upper level, but apparently had been hollowed out after the grave had been dug. No bones or artifacts were discovered in them.

About centrally on the base of the grave was a mass of pure, gray clay, 2 feet long by 18 inches wide and 3 inches thick. In this clay was a copper celt 3 inches in length and 1.3 inch in maximum width. Almost under the celt was a reel-shaped ceremonial ornament of sheet-copper (Plate V, Fig. 2) about 4 inches square measuring across the extremities, the longer axis of the body and its two perforations longitudinal with the grave. Beneath this ornament were faint traces of bone.

MOUND B.

Mound B, 6 feet 7 inches high when measured from the level of the field and 35 feet in diameter of base was investigated by us, a central excavation 14 feet square being sunk to its base, which proved to be slightly more than 6 feet from the summit.

Nothing was discovered in the body of the mound, but almost in the center of the base was an oblong grave extending E. and W., 11 feet 5 inches long by 6 feet wide at the top, but converging to 5 feet 4 inches by 3 feet at its bottom, which was 5 feet below the level of the base. All around this grave, for a considerable distance, was piled clay taken out in its digging—red clay and yellow clay, the red, undisturbed clay having been dug through, and a lower, underlying clay, yellow in color, having been reached and thrown out above the red clay.

As in the case of the grave in Mound A, apparently little if any of the earth that had been thrown out in digging the grave in Mound B had been used to fill it, but seemingly the building of the mound had begun over and around the open grave, the dark material composing the mound filling the grave also.

On the base of this grave, though not completely covering it, was a layer of pure, gray clay, about 4 inches in maximum thickness, of the kind probably used for pottery and similar to the clay found in connection with burials throughout this region.

Under the clay layer, about 2 feet 4 inches from the eastern end of the grave, were two ear-ornaments of sheet-copper, of the spool-shape variety, lying about such distance apart as the breadth of a skull would be. Near these ornaments were fragments of crowns of teeth, stained green from the copper salt.

About 15 inches farther toward the foot of the grave were the fragments of a reel-shaped ornament of sheet-copper, badly decayed, which evidently

had rested on the thorax of the skeleton. Enough of this ornament remained to show that the longer axis of its body and the two perforations had rested transversely to the skeleton.

Farther along, following down the line of the burial, the margins practically in contact, was a similar copper ornament but of much heavier material. The arms of this ornament had been folded back, one above the other across its body, evidently ceremonially. The line of its two perforations lay across that of the former burial, as was the case with the other ornament.

With the exception of part of a drill of flint there were found in these mounds no objects or fragments of stone or of pottery, save in a small pit below the base of one of them, which had been filled with midden debris.

DWELLING-SITE AT WHITE'S FERRY, MADISON COUNTY, ALABAMA.

At White's Ferry, on property of Mr. Lawson White, of Huntsville, Ala., is a dwelling-site and shell deposit similar to a number along the river in this region. As the site was planted in grass and clover, digging was out of the question.

MOUND AND DWELLING-SITE ABOVE CHUNN'S LANDING, MORGAN COUNTY, ALABAMA.

About one-half mile above Chunn's Landing, in full view from the water, are a mound and a dwelling-site of considerable size, on property of Mrs. M. L. Chunn, living near at hand. The mound, which has an attractive appearance, is about 5 feet in height and 45 feet in diameter, approximately. Permission refused.

MOUNDS AND DWELLING-SITE ON HOBBS ISLAND, MADISON COUNTY, ALABAMA.

About one-quarter mile below the upper end of Hobbs Island are two mounds and a dwelling-site on property belonging to Mrs. F. M. Henderson, of Natchez, Miss. We were unable even to measure the mounds at this place (which our agent, before our visit, estimated to be 16 feet and 4 feet in height, respectively), having received notice from the owner not to set foot upon it.

DWELLING-SITE AT THE MOUTH OF FLINT RIVER, MADISON COUNTY, ALABAMA.

Immediately at the union of Flint river with the Tennessee is an area of very irregular outline, about 135 yards by 85 yards, thickly covered with shells, on the property of Mr. R. A. Parsons, of Taylorsville, Ala. This aboriginal site has upon it at present various structures, and at the time of our visit a part of it was in use as a vegetable garden, so that the space open to investigation was somewhat restricted.

At a point where there seemed to be a rise above much of the remainder of the site, holes were put down, showing the deposit to be almost solid shell at first, then midden soil having a slight admixture of shell, this underlaid again by shell, the whole going to a depth of 6 feet 9 inches, where brown sand with occasional shells was found—even this not being the bottom of the deposit.

Realizing that search at this depth would be inadvisable to prolong, owing to the time required for holes so deep and in view of the fact that burials found had nothing with them, thirteen trial-holes only were sunk in this higher part of the site, resulting in the finding of the skeleton of a child, 26 inches down; a burial closely flexed to the left at a depth of 22 inches; a skull with the two upper vertebræ, 4 feet 6 inches from the surface; a skeleton closely flexed on the left, 1 foot down. A few other holes were sunk in outlying parts of the site, but without success.

Forty inches deep was a deposit of masses of sandstone in single thickness, arranged in the form of a horizontal triangle except for the projection of a stone on one side. This irregular triangle, having a base 29 inches in extent and an altitude of 31 inches, rested on, though it did not completely cover, a fireplace on which was charcoal and ashes. No bones were discovered.

A number of coarse arrowheads and knives, of flint, were picked up at this place, and a barrel-shaped stone (sandstone) with a deep depression at each end, which it was said had been plowed up on the site, was acquired there by us.

In the digging were found a number of arrowheads and knives, of flint; two neatly-made piercing implements of bone; a bone needle 5 inches in length, having an eye .1 inch in diameter. The discovery of a needle of this kind has been very infrequent in our archaeological work.

DWELLING-SITE NEAR BEAN ROCK, MARSHALL COUNTY, ALABAMA.

On property belonging to Mr. John Bogenshott, living nearby, along the river bank below Bean Rock and in sight from it, has been an aboriginal place of abode, largely of sandy loam having shell here and there over small areas. A few arrowheads, broken celts, several whole ones, and bits of pottery bearing a small check stamp were found on the surface. There were also noticed on the ground part of a human tibia and a number of slabs which presumably had been with burials. The place had a history of the discovery of hundreds of arrowheads which had been gathered there and sold. Numerous trial-holes in various parts of this site resulted only in the discovery of the skeleton of a child 46 inches down.

DWELLING-SITE NEAR PAINT ROCK LANDING, MARSHALL COUNTY, ALABAMA.

On property near Paint Rock Landing, belonging to Mr. John West, of Guntersville, Ala., is a small camp-site having on the surface little other than a few bits of undecorated pottery and considerable shell in places. The shell

proved to be in deposits about one foot in thickness, below which was midden soil to an inconsiderable depth. We were unable to find at this place any burial or artifact, with the exception of part of a burial near the surface, the rest of which doubtless had been plowed away.

DWELLING-SITE ON THE FOSTER PLACE, MARSHALL COUNTY, ALABAMA.

Along the bank of the river, in a cultivated field forming part of the property of Hon. A. M. Ayers, living near Guntersville, Ala., is a small camp-site having some midden debris on the surface, and in places restricted areas where shells were visible. In that part of the site on which shells were not apparent, digging soon reached undisturbed soil and no burials were encountered.

Numerous holes in the shell deposits came upon the burials of three adults and a child, the former in flexed positions.

Burial No. 3 was an adult flexed on the right, lying at the bottom of a grave 28 inches deep, filled with shells to the surface. These shells were without any admixture of midden soil such as we found with the shells in the general deposit.

Burial No. 4, an adult in the same position as the other, lay in a grave 14 inches deep, also filled to the top with shells only.

The burials at this site were widely scattered; in all events careful digging failed to find any in groups.

Thirty inches below the surface was a slab of limestone of irregular outline, 2 feet long and 1 foot wide, approximately. Under this slab and extending beyond it in places, was a deposit of shells,¹ unmixed with midden debris, having a maximum thickness of 5 inches, made up of some musselshells (*Unio*) with an unusual proportion of univalves in addition, the musselshells in many instances still having the two valves in apposition. Below this deposit no burial was found.

One of our trial-holes came upon a large pit which had become filled with refuse, part-way up in which, as though lost there, was a celt of sedimentary rock, 9 inches in length.

DWELLING-SITE ON THE PENNEY PLACE, MARSHALL COUNTY, ALABAMA.

On the Penney Place, the property of Mr. J. E. Penney, of Birmingham, Ala., in full view from the river-bank, did not trees intervene, is a small ridge having considerable midden debris on the surface. At each end, though not occupying the entire extremities of the ridge, is a small rise containing shell in considerable quantity in places. These rises, which are 25 yards apart, contained all the thirteen burials found in the place, with one exception, a deposit of fragments of cremated bones 13 inches by 8 inches by 5 inches in maximum thickness, found 1 foot 3 inches below the surface in the ridge.

¹ A selection of shells from this deposit included the following: *Unio gibbosus*, *U. incrassatus*, *Dromus dromus*, *Pleurobema clava*, *Truncilla perplexa*, *Quadrula pyramidata*, *Obovaria circulus*, *Campeloma ponderosum*, *Pleurocera filum*, *P. unguatum*, *P. nobile*.

The remaining twelve burials, some near the surface, some in deeper graves, were nine of adults, one of an adolescent, two of children, the adults and adolescent all in some form of flexion. Two came from the more northerly rise, the rest from the one at the other extremity of the ridge. The northerly rise was thoroughly dug through by us, but seemed to have been little used as a place of burial; a large pit, however, filled with refuse was discovered in it.

The more southerly rise seemed well filled with interments, and as parts of it were not explored by us a number doubtless were left behind.

Burial No. 2 was at the bottom of a pit 2 feet 11 inches wide by 4 feet 8 inches long, these dimensions being quite sufficient for a flexed burial.

Burial No. 3, without any sign of disturbance, though but 10 inches below the surface, had the skull alongside the pelvis.

Burial No. 6, a child, had in association an undecorated shell gorget (the only object found with a burial at this place), oval in outline, 3.6 inches by 2.7 inches, having a single perforation at the smaller end.

Burial No. 10, a pit 5 feet 2 inches deep, the contents of which, consisting in the main of midden debris, could be traced almost to the surface, had its lower 20 inches, immediately over the skeleton, filled with shell. This grave extended 2 feet into yellow, undisturbed soil.

Burials Nos. 11 and 12. These skeletons, about one foot apart and lying in the same direction, were in a grave 34 inches deep, the lower foot of which had been filled with shells. Though considerable digging was done around the upper parts of these skeletons, no skulls were discovered. Presumably the burials had been made without them, but possibly the crania had been removed in the digging of another grave, traces of which, however, were not apparent.

Found throughout the digging were: several knives of flint; a small anvil stone of sandstone; several piercing implements of bone; rude agricultural tools of limestone; an undecorated pipe of sandstone, having a hole for a stem directly in the bowl.

On the surface was a fragment of pottery bearing a complicated stamp decoration, the tempering being apparently finely ground particles of shell.

MOUND NEAR GUNTERSVILLE, ALABAMA.

In sight from the steamboat landing at Guntersville, is a mound on property belonging to Mr. Green Seibold of that place, 13.5 feet in height and having diameters of 220 feet and 180 feet. The mound, which has been badly washed, has had a flat top and evidently has been a quadrilateral, domiciliary mound. Three frame structures upon it precluded any attempt at investigation.

DWELLING-SITE ON McKEE ISLAND, MARSHALL COUNTY, ALABAMA.

McKee Island, a short distance above Guntersville, belongs to Mr. T. B. Seibold, who resides somewhat back on the mainland. The island, about one mile in length, has its upper third low-lying, and separated by a small water-

course. The remainder of the island, high ground and fertile soil, has a ridge, probably largely natural, extending through it longitudinally, easterly and westerly, somewhat in from the northern side of the island. On this ridge has been a dwelling-site for the aborigines, whose occupancy, no doubt, contributed somewhat to its height.

Along the middle part of the ridge are various sites once occupied by wigwams, all circular so far as we could determine, except one which was square. The sites were marked by depressions and had been surrounded by small embankments, but as the ground had been under cultivation in the past, exact measurements were not obtainable. Putnam¹ describes sites of this kind, "circular ridges of earth," which were investigated by him in middle Tennessee and which, unlike ours, contained objects of interest. Graves of children only were found by him in these sites.

One of our circular depressions, 32 feet in diameter, was 11 inches below the surrounding level, which perhaps included part of the original embankment. Digging in this site disclosed a fireplace, about centrally situated made up of three layers of burnt clay showing the level of the fireplace had been raised from time to time. Another circular site, 24 feet across, also had a fireplace in the center, approximately, as did still another depression 30 feet in diameter and 1 foot 9 inches deep.

The largest site, 52 feet square, was 1 foot 8 inches below the level around it, part of which was made up by the surrounding embankment, which was 10 inches in height, so that the actual depth of the site below the general level was also 10 inches. In none of the sites was any burial encountered; nor in the largest one, though carefully dug over, was any fireplace discovered, but it is possible that what was sought is beneath a large tree growing about centrally in the depression.

In the square depression, about 8 inches below the surface and having the shape of a wide ellipse of very irregular outline, 25 inches by 27 inches, was an arrangement made up of a single layer of comparatively small slabs and masses, some limestone, some quartzite, all placed in contact one with another. Possibly bones of an infant had decayed away.

On the ridge we have described no mound remained, but the outer part of a low one, which had been perhaps 2 feet in height, had been left by previous diggers, who had piled a number of slabs on the surface. In one spot remaining from the wreck we found scattered bones of a child below slabs of stone. These slabs did not belong to an arrangement made for covering a particular burial, but formed part of what seemed to have been a general arrangement in the central part of the mound, perhaps covering all the burials in it.

¹ Eleventh Rep. Peabody Mus., p. 347 *et seq.* Tidings have come to us at this stage of the printing of our report, of the lamented death of our old friend Prof. Frederic Ward Putnam, which occurred at Cambridge, Mass., August 14, 1915. Professor Putnam expressed much interest in this report on the antiquities of a state in the archæological investigation of which he was so noted a pioneer.

Between where the wigwam sites were investigated and the remnant of the mound, there was, on the ridge, a slight rise, but not of sufficient height or regularity to entitle it to be called a mound. Into this rise a large number of trial-holes were sunk by us, coming on six burials, as follows:

Burial No. 1, partly flexed, the knees to the right, 32 inches down. At one side of the skull, or of what remained of it (for the burials in this place were



FIG. 47.—Vessel of earthenware. With Burial No. 2. McKee Island, Ala. (Height 5.2 inches.)

badly decayed), was an earthenware bowl, undecorated save for a rude effigy of a human head which projects above the margin, and having a conventional tail opposite. On the other side of the cranium was a pot, its body encircled with a line of rude knobs.

Burial No. 2, a child, 2 feet deep, at the head being a stone having a natural formation consisting of a deep concavity. On the other side of the head were an undecorated bottle, and a pot having horizontal projections around the rim, which would serve to keep a cord in place (Fig. 47).

Burial No. 3, partly flexed to the left. Near the skull was an undecorated bottle of excellent ware, having a wide mouth (Fig. 48).

Burial No. 4, a child, having at the skull, which was stained at one place by salt of copper, a pot with two loop-handles, and glass beads in a friable condition. Near what probably had been the leg-bones lay a broken band of sheet-brass curved as for an anklet.

Burial No. 5, a grave extending 2 feet into undisturbed, yellow sand, its depth being 4 feet 8 inches, contained remains of a skeleton partly flexed to the right. At the left of the skull, together, were a deposit consisting of four discoidal stones, each about 1.2 inch in diameter, one having a small depression on one side; a lump of carbonate of lime; two small masses of graphitic material,



FIG. 48.—Bottle of earthenware. With Burial No. 3. McKee Island, Ala. (Height 5.3 inches.)

each showing smoothed surfaces whence probably parts had been ground off for use as paint; three beautiful, triangular arrowheads of flint, ranging between 1.8 inch and 1.1 inch in length, the two largest having long, tapering points and serrated, the smallest similar but to a modified extent.

Burial No. 6, partly flexed on the right.

In this rise also were two arrangements of small masses and slabs, each being about 20 inches by 2 feet, beneath which no burials were found.

With no burials visibly in association were: a beautiful ceremonial axe (Fig. 49), probably of igneous rock, having a blemish on the side opposite the one shown in the illustration, 7.1 inches in length and 2.4 inches across the cutting edge, having the perforation usual in these pieces; an undecorated pot with two loop-handles; a beautiful little implement of flint with expanding blade and curved cutting edge, 2.6 inches in length.

In this rise and in the wigwam sites, found separately, were eight knives and arrowheads of flint, two of the latter being small and triangular.

The lower part of the ridge presented neither wigwam sites nor elevations. It was tentatively dug by us, but no sign of former occupancy was apparent, even the surface being without debris.



FIG. 49.—Ceremonial axe. McKee Island, Ala. (Full size.)

The pottery from this entire site, with one exception, was of coarse, inferior ware, some sherds showing tempering with shell and a small proportion of gravel together. Other sherds had been tempered with what appeared to be small masses of limestone, which react to acid and which are not fragments of shell, their shape being distinctly different.

DWELLING-SITE ON THE SEIBOLD PLACE, MARSHALL COUNTY, ALABAMA.

Also belonging to Mr. T. B. Seibold is an aboriginal site in a large field on the second river level, on the mainland opposite McKee Island. This site has been plowed away to a large extent, and little remained to mark it save much debris on the surface and a stone grave. This grave, whose upper surface was visible in the field, consisted of masses of rock and water-worn boulders, some double the size of a man's head, many much smaller, thrown together without much attention, two and three deep. This arrangement of stone, oval in outline, 7 feet 7 inches long and 5 feet 7 inches in maximum width, had been placed over a skeleton lying on the base of a grave extending 15 inches into undisturbed, underlying clay. The skeleton, however, which was at full length on the back, was not in line with the major axis of the oval, but diagonal to it, the skull being toward the side of the greater end of the oval, the body extending down, the feet near the smaller end. It was impossible to determine the original depth of this grave, so much had been removed from the surface of the field by cul-

tivation. In addition to the 15 inches which the grave extended into undisturbed ground, there were 5 inches of midden soil above.

MOUNDS ON HENRY ISLAND, MARSHALL COUNTY, ALABAMA.

Henry Island, owned by Mr. Bryant Henry, of Guntersville, Ala., is about three miles in length. About half-way up the island is a mound we did not visit, said to have a large, flat top on which are three buildings, and to be about 10 feet in height.

At the head of Henry Island, overlooking the water, has been a mound, presumably quadrangular with flat top, 10.5 feet in height. Apparently, however, more than two-thirds of this mound has been washed away. One diameter, the former length or breadth of the mound, is 100 feet.

At the foot of this remnant, in a cultivated field, itself having long been plowed over, is a mound, roughly circular, about one foot in height, with a diameter of 45 feet. This mound evidently had been plowed away to a considerable extent. There is a history of stone graves discovered in it.

Numerous trial-holes in this low mound resulted in the discovery of nine burials. The first seven burials, one of which was of an adolescent, lay five in flexed positions, two extended. None of these burials lay at a depth greater than slightly more than 4 feet. The skeleton of the adolescent, better preserved than were the other burials, was 3 feet from the surface.

One of the burials had a rude, undecorated pot with two loop-handles; another had, near the skull, a delicate, piercing implement of bone and the stem of an earthenware pipe. The presence of these two objects may have been adventitious, however.

Burial No. 8. Immediately below the surface was a stone grave 6 feet 8 inches by 3 feet, outside measurement. This grave, of the regular stone-box variety, was made of limestone slabs carefully arranged, the slabs having been set a number of inches into the ground below the base of the grave, which was neatly floored with slabs in contact, the small spaces between the larger ones having been filled with fragments of suitable size. A large, single slab was upright at the head, which was directed SE.; another, at the feet.

The covering stones had in part fallen in, as shown in our illustration (Fig. 50), the exposed space at the head of the grave (which is to the reader's right) being caused by the slipping of a slab which had dropped upon the thorax and skull, crushing the cranium, especially the facial parts. From the top of the highest slab to the upper surface of the bones was a distance of 1.5 foot.

Within the grave, whose inside measurements were 5 feet 10 inches by 2 feet 2 inches, and 1 foot 7 inches deep, measuring from the top of the highest slab, was the skeleton of an adult male, extended on the back (Fig. 51). Unfortunately, the slab at the foot of the grave has interfered with the view of the legs which, of course, were present.

Following the curve of the forehead, on which it rested, was an ornament

of sheet-copper which had been square or oblong. We could not determine if the curve imparted to the ornament had been intentional or was due to the slab which had fallen upon it, though owing to a certain regularity in the ap-



FIG. 50.—Burial No. 8. A stone box-grave 6 feet 8 inches by 3 feet, outside measurement. This places on record the presence of the stone box-grave in Alabama. Henry Island, Ala.

pearance of the curve, we believe it to have been purposely made to allow the ornament to follow the outline of the forehead and temporal parts of the skull.



FIG. 51.—Burial No. 8, the skeleton lying in the box-grave, shown after the removal of the covering slabs. Note the stone flooring. Henry Island, Ala.

The ornament, which bore a *repoussé* design, was of purely aboriginal make, having the material pieced together here and there with the aid of small rivets, a well-known procedure of early aboriginal artisans in sheet-copper.

The metal, unfortunately, had corroded away in places along the margin of the ornament and, in addition, went into fragments on removal, though the central parts by good fortune were less badly broken than were the outer ones, as it was centrally the principal decoration proved to be.

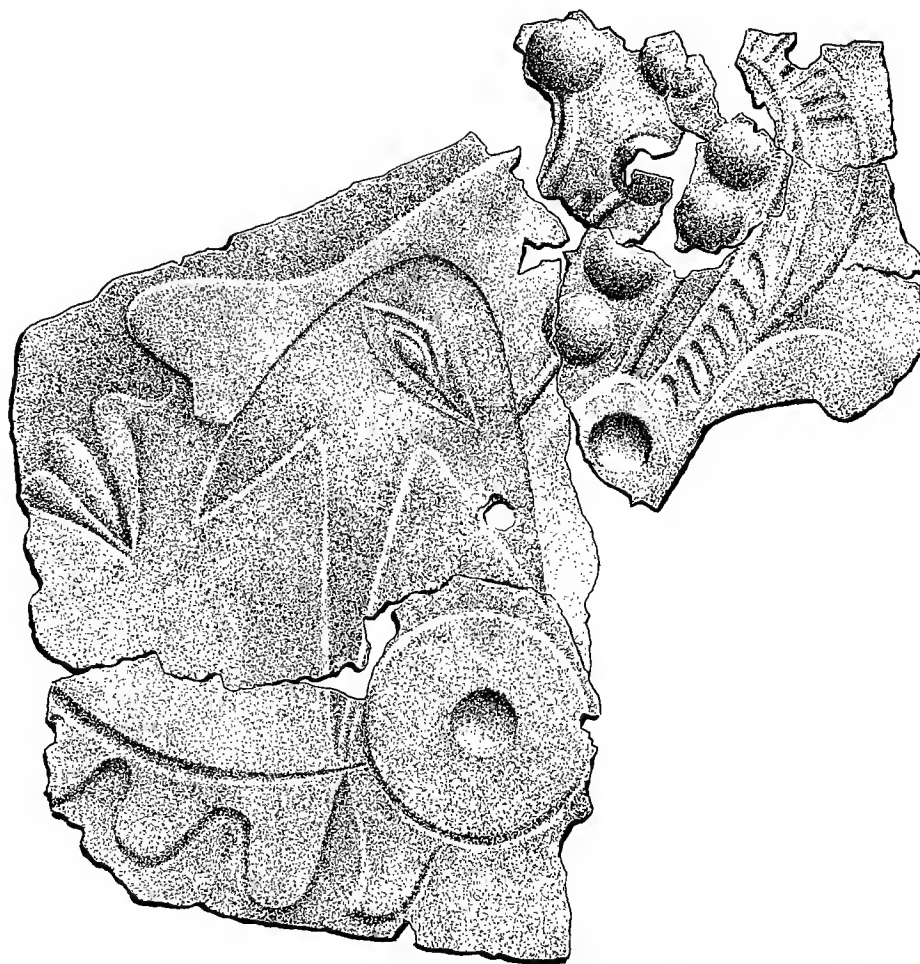


FIG. 52.—Decoration on the sheet-copper. Henry Island, Ala. (Full size.)

Most of the principal fragments have been put together with great care, and the interesting design they bear, a representation of the head of a man, so nearly as it can be made out after careful study, is faithfully shown in Fig. 52,

Burial No. 9, eight inches below the flooring of the stone grave, was the skeleton of a powerfully built male at full length on the back, entirely covered by the slabs above, except the skull which projected beyond the head of the superimposed grave.

The site on Henry Island is of special interest in that the stone grave found

there was a regular stone box-grave found in Alabama, a State from which no stone graves of any kind had been reported by others, hitherto.

THE RODEN MOUNDS, MARSHALL COUNTY, ALABAMA.

About 3.5 miles above Guntersville, but on the opposite side of the river, is the property of Mr. Benjamin Roden, who lives upon it, widely known as the Henry Bottom Place, it being mainly bottom-land bordering the river and having formerly belonged for many years to a family named Henry.

About one-quarter mile in a straight line NW. from the landing on this place, in sight from the river-bank, on the low slope of the first line of hills rising above the alluvial land were six mounds, within a few yards of one another but not in line, one somewhat elongated and resembling a ridge. These mounds had all been under cultivation except the two highest (A and B) which a causeway two or three yards in length connected though two others (C and D), we were informed, had been plowed over but a short period and at the time of our arrival at the place they were covered with small trees and underbrush. The remaining two mounds formed part of the field in which they were and regularly shared in its cultivation.

Mr. Roden, who lives on the property, informed us there was no history of the finding of aboriginal artifacts on the place, though masses of galena had been plowed from some of the mounds.

Investigation showed that the mounds were composed of rich, dark midden loam and of raw clay taken from the underlying soil, in places. Presumably the mounds were built when the site was covered with midden loam (which through wash, is not the case at present), and those carrying material took it, some from the surface, some from the underlying clay after having denuded the surface in spots. Thus, as a result, parts of a mound, as stated, were of one material, parts of another.

Individual "dumps" were not apparent as a rule, bands of workers presumably, as a general thing, having gone to one spot for material collectively and deposited it in the same way.

In all the Roden mounds, very generally the burials were mere traces of bones, sometimes only fragments of skulls.

MOUND A.

This symmetrical mound, a blunt cone 50 feet in diameter of base, 9 feet 6 inches in height according to our measurement (the surface around it was very irregular, making exact figures impossible), but proving to be 10.5 feet from the summit to the base, first was investigated by us by the aid of a central excavation 14 feet square, to undisturbed, underlying soil, light in shade, and then was completely dug down.

Altogether sixty-four burials, some represented only by fragments and by

traces of bone, were encountered in the body of the mound, on its base, and in graves extending below the base, of which twelve were determined to have been of infants or of older children. All burials of interest, including each one accompanied by any artifact, will be described in detail.

Burial No. 1, a faint trace of bones 3 feet 8 inches down. With these was a celt of indurated shale, nearly 12.5 inches in length.

Burial No. 2, mere traces of bones at a depth of slightly more than 3 feet. With this burial lay a reel-shaped ornament of copper, about 6 inches square, outside measurement, that is to say from the tips of the arms. There are two perforations for attachment in the body of this ornament.

Burial No. 5. The remains of this burial consisted of what seemed to be traces of bones adhering to what was left of an ornament, probably a reel-shaped one, of thin sheet-copper, corroded through and through. Near this ornament was another reel-shaped ceremonial of thin sheet-copper, about 4 inches square, having two perforations, the ends of the arms slightly corroded away. A somewhat similar ornament, but of much heavier material, 4.5 inches square, having perforations, was thrown out by the digger from near where the others were found, and possibly came from the same burial, though in no other instance did we find a single interment so richly endowed. An arm from this ceremonial was missing from an early break, the edges of the fracture being carbonated. With the two copper ceremonials were twenty masses of galena, the largest about the size of a child's fist.

In no mounds explored by us before has galena (lead sulphide) figured to anything like the same extent. Some of the masses showed facets, while others had rounded surfaces indicating that the deposit which, as stated, is the carbonate of lead, the white lead of commerce, had been ground off for use as paint.

Burial No. 6. This burial, of an adolescent, 6 feet 3 inches down, was represented by fragments of bone of some size distinctly traceable and in much better condition than were most of the bones in this mound, except those from the base, where presumably moisture had not reached them. In this burial a skeleton extended on the back was clearly indicated. Transversely on the pelvis lay a copper celt 7.25 inches in length and 3.25 inches across the blade. Nearby lay the remains of a conchshell (*Busycon*) from the Gulf.

Burial No. 8. Small fragments of bone badly decayed but indicating the burial of an adult extended on the back, determined by the relation of the remains of the teeth to the other traces of the skull, lying at a depth of 6 feet 10 inches. Where the thorax had been were fifty-one small beads, short, tubular, of thick sheet-copper, the cord still in place in some of them.

Burial No. 9, extended on the back, was at a depth of 8 feet and had with it a fragment of shell and a small mass of almost pure carbonate of lime of the kind we shall see had been used at the site near the Cox mound, to be described in this report.

Burial No. 10, a skeleton at full length on the back, 10.5 feet from the surface, in a grave whose beginning was not noted,¹ 7.5 feet long by 22 inches wide, extending 8 inches into undisturbed soil below the base of the mound.

Around and above the skeleton yellow sand to a maximum depth of 3 inches had been placed, the sand totally differing from the soil surrounding it.

In a pile, arranged one above the other, were four bracelets of copper, each weighing about five ounces and approximately 3 inches by 3.75 inches, made by hammering the metal over on itself to form a bar, the extremities of which were bent together, bringing them almost in contact. This pile of bracelets was in part covered by a side of the skull which rested upon them. Back of the cranium, as if having formed part of a head-dress, were a number of well-preserved, small, shell beads, some discoidal, some barrel-shaped.

Burial No. 11. In making the grave for Burial No. 10 the bones of a child had been disturbed and scattered, a humerus of the child lying near the skull of the adult burial. Other bones were near the pelvis, while the lower jaw of the child was at the right knee of the later burial.

Burial No. 12. This burial lay in part below Burial No. 10, which, however, it had not disturbed and hence had been interred prior to Burial No. 10.

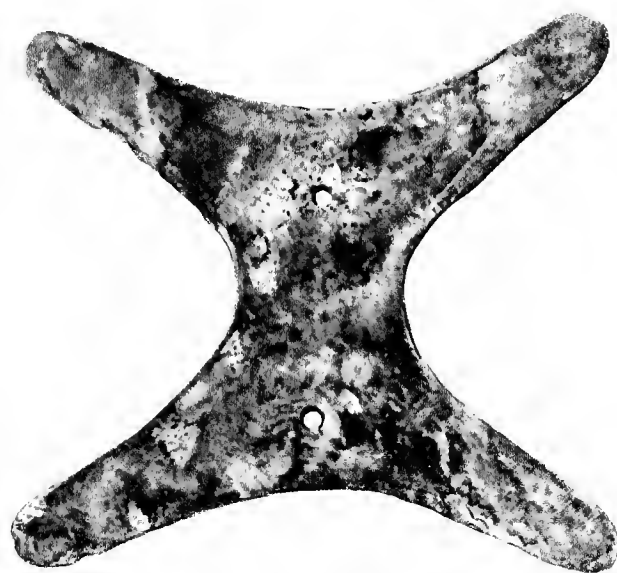
A skeleton fairly well preserved lay at full length on the back, in a grave 7 feet 8 inches long by 2 feet 4 inches wide. The depth of the grave from the surfaces was 12 feet, the two lower feet extending into undisturbed clay beneath the mound. The grave was filled with dark, midden debris and was easily distinguishable as to that part which was surrounded by the light subsoil. On the pelvis was a reel-shaped ceremonial ornament of copper (Plate VI, Fig. 1), without perforations, 6.8 inches by 6.1 inches over all, the arms of the ornament transverse to the line of the skeleton.

Burial No. 13, a child's skeleton, considerably decayed, lay in a grave 10 feet from the surface, extending 10 inches into the light-colored clay beneath the mound. This grave had been filled with the clay dug out in preparing it, and consequently presented no contrast to the clay surrounding it, and probably would not have been discovered had not the grave been somewhat softer than the surrounding material. We have often noted that graves in undisturbed soil, when filled, though probably a long time has elapsed, failed to pack to the same consistency that the ground around them possesses.

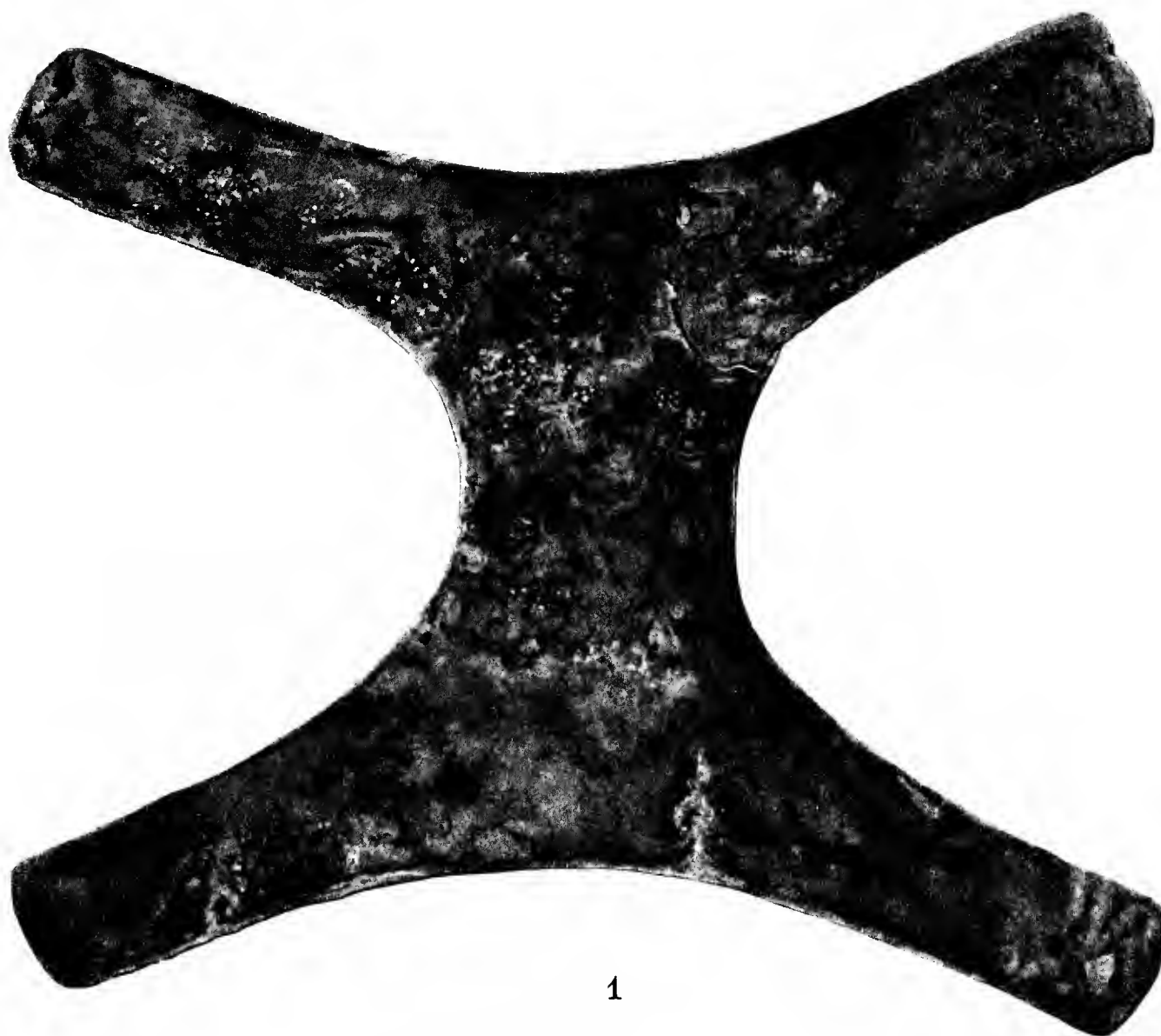
Burials Nos. 14 and 15, one of a child, the other of a young child or an infant, both in graves extending below the base under conditions similar to those described in connection with Burial No. 13.

Burials Nos. 10 to 15, inclusive, were all within a few feet of the center of the base of the mound. All burials heretofore described were reached by the

¹ No grave of this place except that of Burial No. 47, a superficial one, was determined as to its starting point in the mound, owing to prevailing conditions, though it is very probable that all the graves in it dated from the period of its beginning or from an early stage in its building, as the very dark material with which most of the graves were filled was not noted extending up into the mounds for any considerable distance.



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M. L. BAKER

preliminary excavation. All described from now on were encountered while the mound was in process of demolition from the circumference of the base inward to the central excavation, a fact which should be borne in mind in connection with the depths of burials recorded.

No burial was encountered until digging had proceeded some distance inward. Near the margin of the base, however, a curious pit was found. This pit was clearly defined, extending 3 feet 5 inches into undisturbed, yellow clay. The length of the pit, 5 feet 10 inches, would have been suitable for a grave, but the width was only 10 inches. No bones or artifacts were present in this unusual excavation, though very careful search was made.

Burial No. 17, 6 feet 4 inches down, under the slope, consisted of fragments of skull and traces of femora lying on the base of the mound. Where a shoulder would have been, had it not in all probability decayed away, was a mass of galena.

Burial No. 21. In a grave extending below the base and traceable up into the mound, were remains of a skeleton having a few discoidal beads of shell, much decayed, at the neck.

Burial No. 22, the remains of the skeleton of a child, in a grave 3 feet 9 inches by 1 foot 4 inches and extending 1 foot into undisturbed soil below the base of the mound, which here was 6.5 feet from the surface. At the neck were a few decaying, discoidal beads of shell, and at the right thigh, sixteen small masses of galena.

Burial No. 23, a grave extending below the base of the mound, holding traces of a skull and femora. Near the bones was a mass of galena, weighing more than ten pounds, the largest found at this place by us.

Burial No. 26, a grave extending 1.5 foot below the base, containing the remains of a skeleton having near the head twenty-four small bits of galena.

Burial No. 35, fragments of a skull, having the remains of a femur immediately beneath it, and some fragments of a large marine shell.

Burial No. 40, the remains of the skeleton of a child, in a grave below the base. Nearby, in fragments, was a large marine shell (*Cassis tuberosa*) which, perhaps, had been a drinking-cup, and thirteen small masses of galena.

Burial No. 41, 7.5 feet down, shown by fragments to have been extended on the back. At the head and at the feet was a mass of pure clay.

Burial No. 44. Well in the body of the mound were the remains of a skull, near which were fragments of a large, marine univalve and five shells, some much decayed, which had been pierced for stringing, like beads.

Now the members of our expedition, from long experience, are familiar with the small, marine shells (*Marginella* and *Olivella*, and the larger *Oliva* shell) often used, when pierced, by the aborigines, in place of beads, but in the case of these shells with the skull it was evident we had to do with a kind we had never seen in the mounds before.

The shells were carefully labeled by the present writer, and after our return to the north were shown to Dr. H. A. Pilsbry, at our Academy of Natural Sciences

who at once pronounced them to be *Cypræa moneta*, or the cowry shell of Africa and the East.

As the discovery of these shells had never before, we believe, been recorded as having been found in an aboriginal mound or grave in the United States (we have made but few inquiries as to the records of other regions), and as our most careful investigation of the Roden mounds indicated that these had been built before their makers had any intercourse with white persons, except for the presence of these cowries, their discovery became an interesting matter and they were sent to Dr. W. H. Dall, at the United States National Museum.

We quote by permission a letter from Doctor Dall on the subject:

"I should incline to the belief that the cowries were imported in or about the time of Columbus' voyages. Bound, as they supposed, for the Indies, where the cowry was formerly (like our wampum) a staple article of barter, the exploring vessels would undoubtedly have carried cowries as well as the other articles of trade we know they carried. It would not have taken them long to find out that cowries did not pass as currency with American natives and reporting this on their return to Spain later traders would not have carried them for barter. The necklace or bracelet you obtained may have passed from hand to hand as a curiosity (as I have known such things to do) until it reached a people who knew nothing of the whites 'till much later. In fact your cowries may have come off one of Columbus' own vessels!"

From Mr. Charles C. Willoughby we have the information that in the Peabody Museum, Cambridge, Mass., is a dress of a Cree woman, collected by the Lewis and Clark expedition in 1804-1805. On this dress are four dozen cowry shells, perforated. Mr. Willoughby has described the dress and figured it,¹ but the cowry shells in question are on the side of the dress not shown in the photograph and take the place of the upper row of brass buttons on the dress.

The shells found by us differ from those on the Cree dress, which are of a larger variety and much more distinctly humped than are our shells, ours being of the variety *atava* as described by Rochebrune,² who says they come from the Cape Verde Islands. It must be borne in mind, however, that in our present state of knowledge as to the cowry shell, *Cypræa moneta* of Africa and the East, one cannot give exact distribution as to special forms. Hence neither our shells nor those on the Cree dress can now be proved to have come from the same or from different regions.

Mr. Willoughby believes that cowry shells were sold to the Indians by the Hudson's Bay Company late in the eighteenth or early in the nineteenth century.

Our attention has been called by Mr. W. J. Wintemberg to a paper by Prof. Henry Montgomery³ wherein is noted the superficial discovery of a cowry shell

¹ "American Anthropologist," 1905.

² Bulletins de la Société Malacologique de France, Vol. I, 1884, p. 83, plate 1, fig. 4.

³ "Recent Archæological Investigations in Ontario," Transactions of the Canadian Institute, Toronto, 1910, Vol. IX, Part I, No. 20, p. 7, Fig. 6, Pl. IV.

near the so-called Onatonabee Serpent Mound, Peterboro County, Ontario. The shell described by Professor Montgomery is a regular *Cypraea moneta*, or money cowry of Africa and the East, and not a California shell. This shell, which, by the way, is not pierced for stringing, is probably one from the Hudson's Bay Company stock. We do not think the sale of cowries to Indians in the North at a comparatively late date by the Hudson's Bay Company indicates a relatively recent origin for the Roden mounds, for, at a period when the supplies of the Hudson's Bay Company could have reached the makers of the Roden mounds, articles of European make could have got among them from all directions and the mounds presumably would have been well supplied with glass beads, brass, iron, and other things obtained from European sources which, as we see, was very far from being the case.

Burial No. 47, the skeleton of a child, comparatively well-preserved, having with it an oblong section of looking-glass, glass beads, a few beads made from marine shells, a small discoidal stone, an undecorated shell gorget about 3 inches in diameter.

As this burial, having some objects obtained from Europeans, was but 1 foot 8 inches from the surface of the mound, we consider it intrusive and by no means fixing the period when all other burials in the mound were made. No other burials were in graves except those beneath the base of the mound, while the shallow grave containing this comparatively modern burial was clearly traceable from the surface.

Burial No. 51. This grave was dug into before its nature was determined, it having been filled with clay removed from below the base when the grave was dug, and contrary to the usual custom this material had been used to fill the grave rather than the dark midden soil of which the lower part of the mound largely was composed. Near fragments of skull was a reel-shaped ornament of sheet-copper, about 5 inches square, which in part lay over a copper celt, 5.4 inches in length and 1.9 inch across the cutting edge.

This grave was within a very short distance from where our original excavation ended, as were all other burials in this mound detailed from now on. Had our excavation been made slightly larger, we would have found everything of interest present in the mound, though it took us forty-six hours' steady digging with eight trained men to find this out.

Burial No. 52. Extending below the base of the mound was a small grave which evidently had been that of a child, though all trace of bone had disappeared. The grave was filled with very dark midden soil including small fragments of pottery. Cutting into this grave, but not going through it, was another grave containing the remains of a skeleton at full length on the back, at whose right thigh was a large marine shell (*Cassis tuberosa*) in fragments, which may have been a drinking-cup, though not enough of the shell remained to determine the fact.

Burial No. 53, traces of a skull on the base and nearby a small mass of what

proved to be almost pure carbonate of lime. In the site on Mason Island, already described in this report, we have seen that this material was put to practical use.

Burial No. 58, represented by crumbling crowns of teeth, so far as the skull was concerned, though traces of thigh-bones were discovered in place, near which were sixteen small masses of galena. Near the teeth was a copper celt 3.2 inches in length and 1.3 inch across the cutting edge, two masses of galena, and fragments of an undecorated vessel of earthenware. This burial lay in the body of the mound 4 feet from the surface.

Burial No. 59. On the base lay fragments of a skull having nearby fifty-one beads of copper (as in another deposit), each about .3 inch in transverse section and .2 inch in height.

Burial No. 61. In the body of the mound were some particles of bone apparently preserved by the proximity of a copper celt 3.6 inches long and 1.7 inch in maximum width.

Burial No. 62, some fragments of bones lying almost immediately under Burial No. 61 and having in association a reel-shaped ornament of heavy sheet-copper, 5.5 inches by 5.2 inches, having two perforations. This ornament, which neither pick nor spade had approached, the earth near it having been removed with a trowel, had received about the center a furious blow, possibly the impact of an arrow or the thrust of a spear, and had been so nearly broken thereby that the two parts of it had divided when corrosion had set in, though they lay in complete contact in the ground. The blow, of course, may have been a ceremonial one, but separation had not taken place previous to interment.

Burial No. 64, fragments of bones in the body of the mound, accompanied by a celt of indurated shale, 10.75 inches in length, asymmetrical, and having various superficial depressions which a careful workman would have ground away.

In the mound were encountered, in addition to that of the infant of which mention has been made, several empty graves, as follows, from which, beyond question, the bones of former occupants had disappeared through decay: a grave 7 feet long by about 2 feet in width, extending 1 foot 9 inches into undisturbed clay beneath the base, contained nothing beyond a mass of galena 2.5 inches by 2 inches by 1.5 inch, flat on two opposite sides, the circumference artificially rounded, and part of an arrowhead of flint; a small grave evidently intended for a child contained, when found, only a few small masses of galena; another small grave extending beneath the base, as did the others, held neither artifact nor trace of bone.

In the body of the mound had been a burial resembling Burial No. 10 in this mound, in that a skeleton evidently had been interred in sand and entirely differing from the material making up the mound. In this sand, in which no bones were found, were seventeen masses of galena and a reel-shaped ornament of thick, sheet-copper (Plate VI, Fig. 2), 3.1 inches by 2.8 inches, having two perforations.

Found in the soil apart from bones, though probably in some instances marking the presence of former burials, were: ten arrowheads or knives, of flint, found separately; a considerable number of masses of galena, separate as a rule, though sixteen were found together; a small, rude chisel of indurated shale.

MOUND B.

The story of Mound B is soon told.

This mound, practically contiguous to Mound A, was 48 feet in diameter; its height from the outside, where, as in the case of Mound A, the surface was irregular, was 7 feet 9 inches. Inside measurement from the summit to the base, which was marked by undisturbed, yellow clay, proved the altitude to be 9 feet.

An excavation 16 feet by 20 feet, put down centrally to the base, came upon eighteen burials, traces and small fragments of bones, such as were encountered by us in the body of Mound A, four of the burials being in graves extending into the soil below the base of the mound. In addition, a grave like the rest had lost its burial through decay.

Artifacts with the burials were as follows:

Burial No. 1, a mere trace of bones 2 feet 8 inches down, had two small masses of galena and a few, small, tubular beads of sheet-copper much corroded.

Burial No. 2, a faint trace of bones and the crown of a tooth. With these were a number of masses of galena not in a deposit but short distances apart, and several tubular beads of sheet-copper. This burial lay 2 feet 10 inches below the surface, and, like Burial No. 1, presumably had been much deeper, the peak of the mound having worn away.

Burial No. 13, six feet deep and represented by fragments of a skull, the remainder of the burial presumably having decayed away. Near where a forearm would have been was a celt of indurated shale, 9.5 inches in length.

Burial No. 14, a skull in fragments, 9 feet down, with which was a rude sphere of galena about 2 inches in diameter.

Burial No. 16, a grave 5.5 feet in length by 20 inches in width and 7 feet 8 inches below the surface of the mound, the lower 10 inches extending into undisturbed clay. On the bottom of this grave had lain a skeleton of which only fragments of the skull remained. Transversely under the skull was a celt of indurated shale (a material which seemed to predominate in this region), more than 10 inches in length, very rudely made, having rough depressions on both sides, giving the implement an unfinished appearance, though a part chipped from the cutting edge showed it to have been considered fit for use.

Scattered throughout the mound were various masses of galena apart from burials. Together, but with no bones in association, though no doubt a burial had been present, were a few small, tubular beads of sheet-copper, badly corroded, and four masses of galena. Two arrowheads or knives of flint were found separately in the soil, as was a small and very rude celt and, at a depth of 7 feet, a strip of thick sheet-copper, twisted and curved in an irregular fashion.

MOUND C.

Mound C, 7 feet 6 inches in height measured from the outside, though from the top to undisturbed clay at the center of the base it proved to be 6 feet 9 inches, and with diameters of base of 43 feet and 73 feet, had its central part to the extent of 12 feet square dug out by us to the base.

Traces of seven burials were encountered, none at a depth less than 5 feet 2 inches.

Three graves, each about 20 inches in width and ranging between 6 feet and 6 feet 9 inches in length were found, extending below the base to depths between 1 foot and 1.5 foot approximately, one grave being nearly central in it.

In these graves were small fragments and faint traces of bones, in one instance indicating that a burial had been extended, as was probably the case with the other two. The burial in question, if our belief as to its position is correct, had a mass of galena at the pelvis and two others at the right of the skull.

Here and there in the mound, apart from burials, were found: fragments of an ornament of sheet-copper; three separate masses of galena; thirteen small masses of lead sulphide in a deposit, the largest about 2 inches in diameter, of irregular shape.

MOUND D.

This mound, 5 feet in height and 38 feet in diameter of its circular base, was surrounded and completely dug down by us, the work being carried on at a level below that of the base, which proved to be 5 feet 7 inches below the summit of the mound.

No burial was encountered until a point 12 feet from the center had been reached. The burials found, thirteen in number, ranging in depth between 2 feet 8 inches and 6 feet 10 inches, were so badly decayed that small fragments and mere traces only were observable. It is probable, so minute were some of the parts representing skeletons, that burials escaped our notice, though with these presumably no imperishable artifacts can have been.

In two instances burials were found where it was evident skeletons had not been interred in anatomical order. In one case remains of a thigh-bone lay near fragments of a skull. In another were foot-bones beside the remains of a cranium.

Several burials were on or near the base, two being in shallow graves below it, one of which we shall particularly describe.

Burial No. 13, radiating from the center of the base of the mound, the head end directed from it, was very distinctly marked, the black material filling the grave contrasting with the bright underlying clay into which the grave had been dug to a depth of 1 foot 3 inches. Its shape was oblong; its length, 6 feet 9 inches; its width, 23 inches. In the grave were found a skull in small fragments, teeth, a trace of bone here and there.

With one burial, 32 inches deep, were fourteen masses of galena covered with a coating of lead carbonate (white lead, a paint), as was most of the galena from

these mounds. Eight of these masses, the largest of which was 2.5 inches by 2 inches by 1.5 inch, were somewhat scattered; the rest were in a group.

With the same burial, probably, all together, were forty-eight small masses of galena and a reel-shaped ornament of sheet-copper having one of the arms corroded away.

With another burial was a similar object, the sheet-copper being considerably thicker. In this one two perforations are present, the other being without them. A third reel-shaped ornament of hammered copper, without perforations, differed somewhat in shape from the others; like them it lay near human remains. The measurements of these objects, respectively, are: 3.2 inches by 3.6 inches; 2.8 inches by 4.8 inches; 3.4 inches by 6.3 inches.

Away from human remains were: two masses of galena found separately; a spike-shaped arrowhead, another with concave base, both of flint; a celt of indurated shale, 11 inches long and 2.4 inches in maximum width, which lay 10 inches below the surface and may possibly have been placed with a burial, traces of which were not discovered.

MOUND E.

Mound E, evidently much spread by cultivation and reduced in height, had diameters of 40 feet and 50 feet, its height being 5 feet. A measurement taken later from the summit to the base gave the same result.

A central excavation 20 feet square, which probably included most of the original mound, although burials were encountered to the very edge of the digging, was put down to the base.

Twenty burials, often merely indicated, or represented by parts of a skull, lay in the mound, on its base, and in a few instances in graves extending below the base.

A single mass of galena lay near each of two burials; in one instance a mass of pure clay had been interred near a skull.

Burial No. 2, of which only a skull remained, had near it on one side an asymmetrical celt of indurated shale, 12.75 inches in length, and on the other side a mass of pure clay.

Burial No. 6 had, near fragments of a skull and with traces of other bones, a rude discoidal of galena.

Burial No. 7, a child, the only one noted in the mound, had at the neck a number of tubular beads of sheet-copper, badly decayed; another burial had a few similar beads.

Burial No. 10, a grave 5 feet 10 inches from the surface, extending 1 foot below the base, 8 feet by 2 feet 10 inches in size, contained fragments of human bones indicating a burial at length. Near traces of the skull was a sheet of mica of irregular outline, about 5.5 inches by 5.75 inches, on which were two small masses of galena.

Burial No. 16, fragments of a skull only, having beside it a rude agricultural tool of shale, 9.5 inches in length and 4.1 inches in maximum width.

Several masses of galena were found separately in the mound apart from bones as were three arrowheads or knives of flint and a small and very rude celt of indurated shale, roughly chipped, without polish save at the cutting edge.

Lying diagonally in the mound with the extremity of one of its arms at a level with the surface, was a reel-shaped ornament of sheet-copper about 4 inches square, having two perforations. This ornament had been struck by a plow presumably, with a resultant bending of two of the arms.

In earth that had been thrown out was found an oblong bead of sheet-copper, 1.25 inch long, .5 inch in width, flat on two opposite sides. The bead had been shaped in the usual manner by overlapping the sheet-metal.

MOUND F.

Mound F, seemingly three mounds or humps merged in part, had its maximum height and width, 4.5 feet and 65 feet, respectively, near the western extremity, whence it sloped downward, tapering considerably toward the eastern end. Its length was 170 feet. Cultivation had, no doubt, greatly changed its original proportions.

In the highest hump, centrally, an excavation 25 feet by 29 feet was put down and carried below the base, showing the mound to be about the height of its outside measurement.

Twelve burials, affected to almost the last stage of decay, were encountered, as follows:

Burial No. 1, the remains of a skull, 2 feet down.

Burial No. 2, a skull in the body of the mound at a depth of 2 feet, having, where the neck would have been, two undecorated discs of shell, one about 2.5 inches in diameter, the other somewhat smaller. These discs, which were badly decayed and in fragments, each had two perforations. There was also near this skull a mass of pure clay.

Burial No. 3, at the bottom of a grave 26 inches across and 40 inches in length, extending 16 inches into the undisturbed soil below the mound, was what decay had left of a sheet-copper, reel-shaped ornament, having two perforations. Below it, preserved by the copper salt, was a small fragment of a long-bone, all that remained of the skeleton which, judging from the size of the grave, had been that of a child.

Burial No. 4. At the bottom of a grave similar to so many found at this place, were traces of a skull. Above the skeleton had been a thin deposit of pure clay.

Burial No. 5, a grave apparently made by digging from the original surface of the site through 4 or 5 inches of midden deposit, which had been present at this part of it, to undisturbed clay. At the bottom of the grave a layer of pure, yellow sand, about .5 inch in depth, had been placed. On this the skeleton, if we may judge by the skull and faint traces of other bones indicating a skeleton at length, had been placed and over it had been deposited a layer of pure clay, varying in thickness between 1 and 3 inches.

Burial No. 6, a grave-pit 7 feet 2 inches deep, extending 26 inches into undisturbed soil, 3 feet broad by 11 feet in length, there being considerable space between where the skull had been and the head of the grave. This burial, represented by part of a femur, and then, at the proper distance, by teeth and other parts of the skull, at each side of which had been a spool-shaped ear ornament of sheet-copper, one of which had discolored the adjacent temporal bone, had, near the head, a rudely-rounded mass of galena about 3.5 inches in diameter. On the space where the thorax must have been were two reel-shaped ornaments of sheet-copper, both having two perforations, one of the ornaments being somewhat decayed as to two of its arms. One of these objects, which is intact, 3.9 inches by 4.5 inches, lay beside the other, that is, the two transversely as to the skeleton, having about one inch of space between them. One, however, had been placed with its two perforations in line with the burial, while the perforations of the other ornament were transverse to the longer axis of the interment. With these ornaments was matting preserved by the copper salt.

Immediately alongside Burial No. 6, and having no partition between, was a grave of the same length as that of Number 6, but 6 inches deeper and 1 foot 6 inches narrower. No human bones were present in this grave. In connection with these two graves were two excavations, seemingly post-holes, the exact use of which was not determined.

Burial No. 7, a grave below the base, in which were faint traces of bones, two masses of galena, and a lump of clay at one end.

Burial No. 8, a grave extending into undisturbed soil, containing a fragment of femur and a bit of humerus with which was part of a large conchshell, badly decayed.

Burial No. 9, a grave in which only crowns of teeth were found, having a large mass of galena, and a quantity of pure clay at one end.

Burial No. 10, fragments of a skull at a depth of 3 feet.

Burial No. 11, parts of a skull and fragments of other bones, 4.5 feet deep, on the base of the mound. Over this burial, which had been under a thin stratum of pure clay, was a mass of galena.

Burial No. 12, a grave in which was simply a fragment of bone lying beneath a layer of clay. A mass of galena was in this grave.

There was also in the mound a grave having pure clay at each end, but in which no bones were discovered.

A number of masses of galena were scattered through the mound, some carefully rounded. Also one arrowhead was found, and a celt of indurated shale, 8.5 inches in length, which, no doubt, belonged to a burial that had left no trace.

There was also present in the mound a mass of soft material about 2.5 inches by 1.5 inch by 1 inch, through which, for some purpose unknown to us, a hole had been made. This material has been determined by Doctor Keller to be

an earthy variety of anglesite, or sulphate of lead, which could have been used as paint, gray-white in shade.

In the second hump of Mound F a hole 10 feet square was put down through the base this hump having almost the same height as the one already described, resulting in the discovery of three burials.

Burial No. 1, fragments of a skull 20 inches deep.

Burial No. 2, traces of a skull in a grave extending 8 inches into undisturbed soil.

Burial No. 3, a grave having at one end a mass of pure clay, but containing only a fragment of long-bone.

There was also a grave 7.5 feet by 2 feet and 8 feet deep, 3 feet 8 inches of which extended into undisturbed clay below the base. Though a mass of clay was in this grave, no bones were discovered.

In the smallest hump an excavation 10 feet square came upon four burials.

Burial No. 1, a skull in the body of the mound accompanied by clay.

Burial No. 2, a grave, the base of which was 44 inches from the surface, containing only remains of a skull, near which was a mass of pure clay. Where the pelvis doubtless had been was a celt of copper 3.5 inches in length and 1.5 inch across the cutting edge. In the soil filling the grave, which was 2 feet 9 inches wide by 8 feet 8 inches long, was a mass of galena.

Burial No. 3, a grave 4 feet deep containing two skulls, one just above the other, the lower accompanied by a mass of clay, the other having a fine spear-head of flint, 6.4 inches in length. This spearhead apparently had been broken in two parts ceremonially, the fragments lying a considerable distance apart. The grave, smaller than many in the mound, was 2 feet 3 inches wide by 7 feet in length. It extended 1 foot 2 inches into undisturbed soil.

Burial No. 4, a grave containing a faint trace of bones, and a mass of clay at each end.

MOUND AND DWELLING-SITE ON PINE ISLAND, MARSHALL COUNTY, ALABAMA.

This island, about four miles long, locally well known as a place where aboriginal bones and artifacts have been plowed up, is owned by Mr. J. C. Gunter, of Bridgeport, Ala.

At the very upper end of the island (save a small area washed in flood-time until its level is far below that of the rest of the land) is the remainder of what has been a mound of considerable size, of which probably not one-third remains, three sides and much of the body having washed away. What is left of the mound has a height of about 8 feet above the general level, though one taking the altitude from the low-lying ground at the extreme upper end of the island, which is immediately at the farther side of the mound, would of course obtain a height far in excess of that we have given. It was impossible to arrive at any estimate of the original diameters of the mound. No digging was attempted

in this remnant, as it served as a kind of bulwark to stay the rush of water in times of freshets, and as the mound probably had been of the domiciliary class it is unlikely much would have been gained from digging it, even had it been intact.

Beginning immediately at the lower, or down-river, side of the mound, is a great, level space about one-half mile in length, broadening as the island expands from its pointed extremity, and having over the surface, here and there, fragments of flint or of coarse, shell-tempered pottery. Judging from its appearance, all this area has been an aboriginal dwelling-site presumably containing scattered burials which doubtless were more condensed in several low rises and ridges, none probably more than one foot in height, to be seen at intervals over the field.

Unfortunately, all this site was planted in grass, though we obtained the privilege to dig through two spaces in it, one 50 feet by 60 feet enclosing a small rise, and another 50 feet square which included part of a ridge, both being but a short distance from the mound.

In the rise were eighteen burials,¹ of which thirteen were of adults, one of an adolescent, and five of infants or of older children. Of the adult burials eleven were of the flexed variety, one was extended on the back, one was a disturbance. The adolescent lay at full length on the back.

These burials were grouped toward the center of the rise and lay from near the surface to a depth of nearly 6 feet, this latter measurement being of a grave extending 8 inches into undisturbed sand. In other parts of the rise, however, made-ground, which in places had at its base 4 or 5 inches of broken musselshells and loamy sand, of which latter material the made-ground was mainly composed, had a depth of more than 6 feet.

It seemed to us, however, that the deposit in this place was not entirely due to aboriginal occupancy, as thin layers were present in the lower part of it which, being of pure sand, might have been deposited by the river in high water, while that part of the site, though occupied, was lower than it is at present. However, we could not definitely determine this matter.

The burials in the rise apparently had been made in shallow graves at various periods in the growth of the site, as above some of these graves was undisturbed soil of considerable depth.

We shall now describe each burial from the rise that presented any feature of interest, including all with which artifacts were found.

Burial No. 1, partly flexed to the right, having at the head a fairly symmetrical bottle with wide mouth, undecorated and of inferior ware.

Burial No. 4, at full length on the back, the arms and forearms alongside the trunk. Crossing the right forearm, the cutting edge inward, was a beautiful ceremonial axe of indurated shale, 6.9 inches in length, having a countersunk

¹ Burial No. 5 included a child and an infant.

perforation as shown in Fig. 53. At the left of the skull was a mass of red pigment, hematite, and various small fragments of mica were on the thorax and left shoulder.

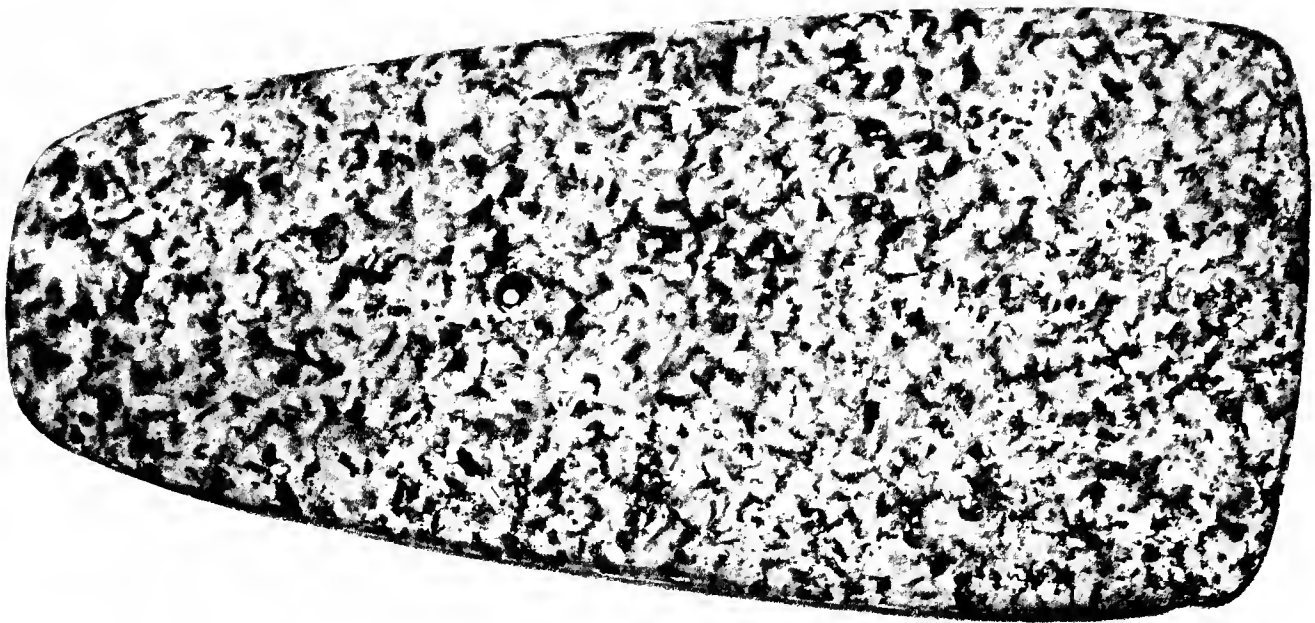
Burial No. 5. At the bottom of a pit, 5 feet 9 inches from the surface, was an arrangement of slabs and masses of rock, limestone, sandstone, quartzite, in double thickness in some instances, rudely oblong but tapering somewhat at one end. This aggregation of slabs and masses was 34 inches in length, 14 inches and 9 inches across the ends, respectively; its depth from the surface was 3 feet 10 inches.



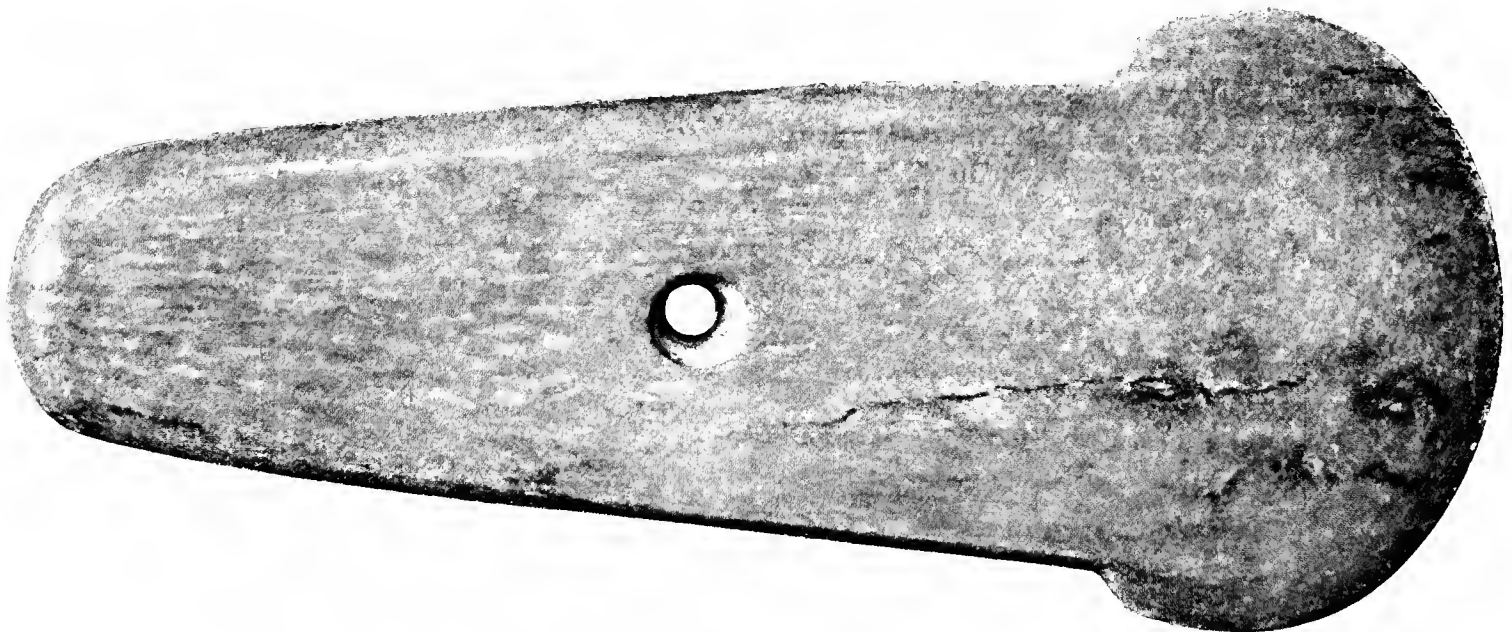
FIG. 53.—Ceremonial axe. With Burial No. 4. Pine Island, Ala. (Full size.)

Lying transversely at the wider end was the skeleton of an infant, and, in addition, with its feet toward the back of the first burial and in part under the same arrangement of stones, which was without interval and undoubtedly made at the same time, was the skeleton of an older child, closely flexed, its lower extremities and the lower part of the trunk covered by the stones, the remainder of the bones extending out from one side of the arrangement of stones, though a space 16 inches in length under one end of the arrangement was unoccupied, as shown in Fig. 54. Evidently the burials had been placed in the bottom of the pit and perhaps covered with a few inches of earth, and presumably the arrangement of the stones, though well-intended, had not followed the position of one of the bodies.

Burial No. 9, a skeleton closely flexed on the left side, lying slightly in a



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M. L. BAKER

1. SITE ON PINE ISLAND, CEREMONIAL AXE. (FULL SIZE)
2. MOUND ON THE BISS PLACE, CEREMONIAL AXE. (FULL SIZE)

diagonal position, the head higher than the pelvis. Inverted over the skull, the upper part of the thorax, and the proximal end of the humerus, was a fragment representing more than one-half of a rude, undecorated bowl that had been 14 inches in diameter.

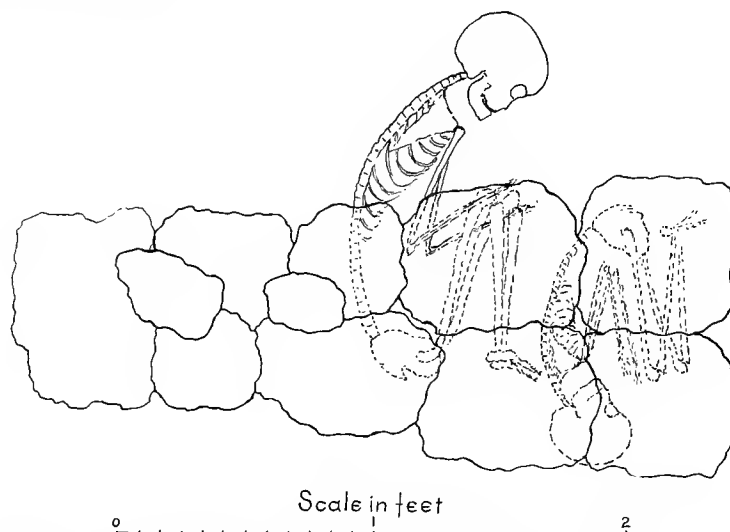


FIG. 54.—Burial No. 5. The slabs and skeletons lie in a horizontal plane. Pine Island, Ala.

Here we observe a kind of urn-burial in Alabama,¹ a state noted for this class of interments.

Burial No. 10, closely flexed on the left side, a coarse bowl having rude knobs on the side, back of the skull, shell beads at the right and left wrists.

Burial No. 13, a young child having shell beads at the neck.

Burial No. 14, partly flexed to the right, having an undecorated bottle of coarse ware with discoidal base at the outer side of the knees. Vertical, near the skull, a flat side parallel to the cranium, was a ceremonial axe of indurated shale, 7.6 inches in length (Plate VII, Fig. 1).

At the outer side of the right forearm and parallel to it was a deposit. First were two celts, one upon the other, the cutting edges directed toward the hand. Next in order outward was a narrow celt or chisel, beneath which were numerous fragments of chert. Below these again lay a small chisel. All these implements were of indurated shale. Next were five bone implements, in fragments, having nearby a mass of graphite about the size of an infant's hand. Under the implements and the graphite were additional fragments of chert. These fragments, fifty-seven in all, were none larger than 2 inches by 1 inch and from half to three-quarters of an inch in thickness.

Away from burials, in the soil, were: a fragment having belonged to a very large vessel and having attached to it a massive loop-handle; a small discoidal stone; a fragment of sheet-copper; a small cone of sheet-copper, formed by overlapping one edge above the other; a single glass bead.

¹ See our article "Urn-burial" in the "Handbook of American Indians."

29 JOURN. A. N. S. PHILA., VOL. XVI.

In that part of the ridge investigated by us were twenty burials: nine of adults, one of an adolescent, ten of infants or of older children. Seven adults and one adolescent had been buried in forms of flexion. One adult lay extended on the back, while one rested at length as far as the knees, the legs being closely flexed against the thighs.

Burials Nos. 19, a child, and 28, adult, flexed, had each a shell ear-plug of the pin variety in place at either side of the head. In addition, the latter burial had under the chin a shell gorget 2.7 inches by 2.2 inches with excised spaces and an engraved design on the concave side representing a rattlesnake (Fig. 55),



FIG. 55.—Shell gorget, rattlesnake design. With Burial No. 28. Pine Island, Ala. (About full size.)

not the conventional serpent such as we sometimes see on gorgets from Tennessee, but an attempt to portray the snake, similar to some we have found and to those shown by Holmes in Plates LXII and LXV of his "Art in Shell." The specimen found at this place, however, is the rudest attempt of the kind with which we are familiar.

Burial No. 20, flexed, had quantities of beads made from the marine shell *Marginella*, these particular shells seemingly having been selected, as their average size is unusually large. They are in excellent condition. Under the left shoulder was a celt of iron or of steel, 3.25 inches in length, and a tomahawk of the same material showing where the handle had been at the back, the blade expanding to a cutting edge.

Burial No. 22, a child extended on the back, had at one side of the skull a rude bowl with a small degree of incised decoration around the opening, and at the other side of the skull, a pot with two loop-handles, undecorated save for four knobs around the body. In this vessel was a musselshell (*Unio*). At one side of the head was an ear-ornament of the shell-pin kind, its companion lying broken under the skull. An undecorated bowl having two loop-handles rested on the thighs.

Burial No. 23, a child having at the neck twenty shell beads ranging in length

between .5 inch and 1.1 inch, the latter being sections of the columella of the conch. With these were two *Oliva* shells pierced for stringing.

Burial No. 26, a child near whose body had been placed an undecorated bowl. A spoon carved from a musselshell lay at the pelvis.

Burial No. 27, a child. At the skull was an undecorated pot, having had two loop-handles, one of which is missing.



FIG. 56.—Vessel of earthenware. With Burial No. 29. Pine Island, Ala. (Height 5.6 inches.)

Burial No. 29, flexed, had at the left shoulder a vessel bearing a small amount of incised decoration, shown in Fig. 56 as illustrating the best of the ware from this place. The skull of this skeleton was saved.

Burial No. 32, a child, having at the neck seven marine shells (*Oliva sayana*) pierced longitudinally for use as beads, and in front of the face an undecorated pot with one of two handles missing.

Burial No. 33, a child. At the neck were two shell beads of fair size, and at the head an undecorated vessel with two handles, containing a decaying musselshell that no doubt had served as a spoon.

Burial No. 38, a child about eight years of age, lying at a depth of 4 feet 4 inches. From the neck to the pelvis and at the knees were quantities of glass beads and a few of shell. Across the chest, in line, near other beads were four discs of shell, the largest 2.2 inches by 1.8 inch in diameter, each having a perforation on two opposite sides near the margin and showing where a cord had extended across the front. With these ornaments were two tubular beads of shell, each 2 inches in length. On each forearm was heavy iron wire twisted to form a

kind of bracelet. At the feet was a deposit of eight small, triangular arrowheads of flint, all pointing in the same direction.

Three feet from the surface, forming almost an oval 2 feet by 1 foot 2 inches, had been arranged a slab of quartzite about half covering one of limestone. Below these slabs no burial was found.

Objects apart from burials were: a rude, undecorated pot near a fireplace; several small knives of flint; a small drill of the same material; a diminutive boss of impure sheet-silver, centrally perforated; an undecorated bowl about 6 inches in diameter, inverted; a barrel 50 inches in length, having belonged to a flint-lock firearm. This barrel had a smooth bore and was of iron, not of steel. No remnant of the stock remained, nor was the lock present, and it is possible that the barrel, which was only 1.5 foot below the surface, may not have formed part of the aboriginal deposit. The jaw of a black bear came from midden debris at this site.

DWELLING-SITES NEAR GARLAND'S FERRY, JACKSON COUNTY, ALABAMA.

On property belonging to Mrs. Hattie Garland, of Scotsboro, Ala., are three small dwelling-sites in cultivated land, and two others, much smaller, which were not investigated.

A few yards from the river and about 50 yards SW. from where it is joined by a channel draining rain-water from the hills, is a circular patch covered with fragments of shell and having a small proportion of other midden debris. Its diameter is about 35 feet. On the surface lay four slabs which the tenant occupying the property informed us he had struck with a plow and, upon removing them, had uncovered a skeleton.

Twelve burials were found in this slight rise—ten of adults, two of children, one burial including two children. These burials were of the usual flexed varieties, including a number of disturbed bones, and as a rule lay on the original surface, having over them only about one foot of earth, though no doubt considerably more had covered them prior to the cultivation of the field. Several, however, lay in pits, one of which was 3 feet deep.

Burial No. 2, a child, closely flexed on the right, had a mass of stone which had been placed in the ground diagonally in a way to cover the pelvis and the lower extremities, which were drawn up, as of necessity in a closely-flexed burial. A smaller mass of stone was above the upper part of the skull, the lower portion of which, as well as the trunk, being unprotected.

A short distance from the skull was what may have been a ceremonial group of masses of stone, consisting of five in contact. Beneath them was a thin layer of clay, slightly reddened by heat but not baked, and a small amount of charcoal. No bones lay beneath this arrangement of stone.

Burial No. 3, the skeleton of a child in a shallow pit, the bottom of which was 26 inches from the surface. Covering the flexed body and extremities and part of the skull were two slabs a short distance apart, the space between them

being filled by the lower part of a mass of rock whose upper portion fitted in to form part of a second layer, there being a large mass on one side of it and two smaller ones, side by side, on the other. The four upper masses were 21 inches

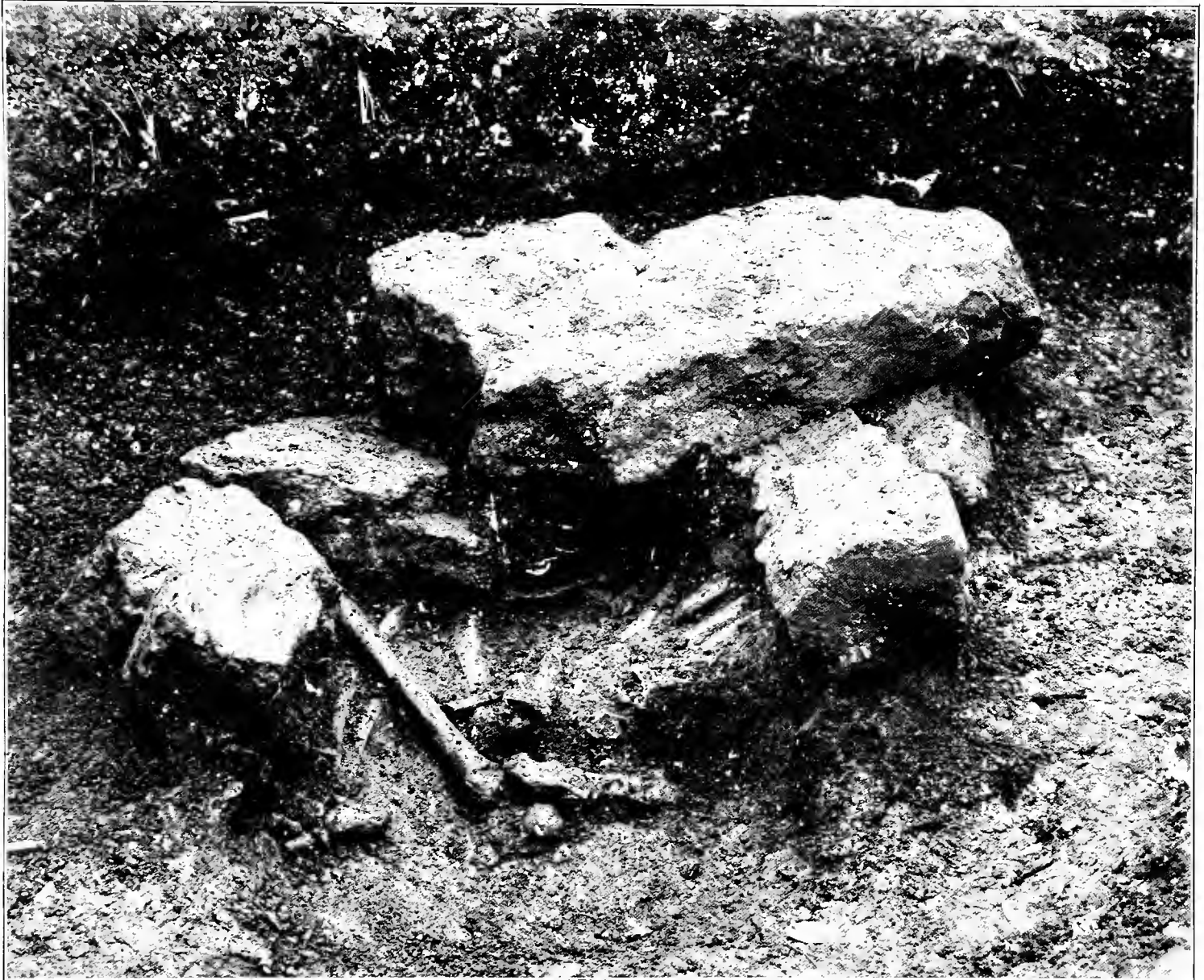


FIG. 57.—Burial No. 9, a burial having arranged above it masses of rock, somewhat in the form of a horseshoe, 3 feet 2 inches long and 26 inches across the opening, over all. Garland's Ferry, Ala.

long, 1 foot in width at one end, 9 inches at the other extremity, the smaller one being over the skull, as more space was demanded for the trunk and flexed extremities. This upper layer completely covered the skeleton.

Burial No. 9. In a pit 22 inches deep was a skeleton closely flexed on the right, having at the wrist marine shells (*Olivella*) used as beads. The skeleton lay within an arrangement of masses and slabs of claystone, somewhat resembling a horseshoe, about 3 feet 2 inches long and 2.5 feet across the opening, outside measurement, as shown in Fig. 57. Of the skeleton there were exposed the lower half of the trunk, the lower extremities except the knees, and the upper extremities except proximal parts of the humeri, and the right forearm.



FIG. 58.—Burial No. 12. A placement of masses of rock, 4 feet 2 inches long and 2 feet 4 inches in maximum width, covering the skeletons of two children. Garland's Ferry, Ala.

When the large slab which formed part of the horseshoe had been removed, the entire skeleton was exposed and it was seen that it lay between four masses of rock on one side and one long mass on the other side, having behind it a smaller mass that did not contribute to the length of the side. Evidently, then, the bones had been placed in an enclosure open at both ends, the sides of which acted as supports for the large slab placed horizontally over the upper part of the skeleton.

Burial No. 12 was in a pit 2 feet 10 inches deep and included an arrangement

of masses of stone, 4 feet 2 inches in length; maximum width, at one end, 2 feet 4 inches; at the other end, 1 foot 9 inches. This arrangement (shown in Fig. 58) had its upper surface 1 foot 6 inches below the level of the site.

Lying transversely under the wider end was the skeleton of a child four or five years of age, closely flexed on the right side, covered by the largest pair of masses and the adjacent stone at the end.

At a slightly lower level than the other burial, which was somewhat above that of the bottom of the pit, was the skeleton of a child about 6 years of age, partly flexed on the right side and covered by the remainder of the masses of stone.

An interesting feature in connection with this burial is that five of the masses, all of sandstone, are water-worn boulders and all are more or less pitted, probably by the cracking of nuts, none having more than four pits on one side. Some of these masses also had concave surfaces caused by use as mortars.

One hundred and fifty yards W. from the other site, in the same field, was one of about equal size, having, however, much more shell in its soil. In this site were found seven burials: three of adults, two of adolescents, two of children. With the exception of an adult burial at full length face down, the adults and adolescents lay in ordinary forms of flexion.

Burial No. 14. The arrangement of this grave was symmetrical, consisting as it did of practically three sides of a square formed by masses of stone arranged side by side, having, however, a few small masses curving in a purposeless way, apparently, from one end of an open side.

This equilateral area, about 3 feet in diameter, without covering of any kind, contained a skeleton lying partly flexed to the left, the head, curiously enough, according to our ideas, being at the open end and projecting somewhat beyond it. Near the face was a mass of bright red pigment (hematite).

With the exception of a small space left open in one of the sides, the stones forming them were practically contiguous and included an interesting feature. The grave next to be described had been made previous to the one under description and had been reached in digging to prepare for Burial No. 14, whose makers had utilized that part of the grave discovered that could be made to fit into one of the sides of their enclosure.

Burial No. 15, an elongate pile of stones over the bones of a child.

Burial No. 17 lay flexed on the left side beneath 8 inches of the shell material composing the site. Above this lay two slabs, one over the lower part of the trunk, the other above the feet of the skeleton. The upper surface of the slabs was covered by 18 inches of shell material to the surface.

One hundred yards NE. by N. from the union of the watercourse with the river, but on the opposite side of it, still on property belonging to Mrs. Garland, was a site similar in appearance to the others and of about the same size, having upon it a pile of masses and slabs of stone, about 2.5 feet in height and 3 feet in diameter, which had been plowed up and piled in the cultivation of the field. In this site careful digging reached five flexed burials of adults.

Burial No. 19, partly flexed on the left, had a number of small masses of rock scattered here and there, in the soil above it.

Burial No. 20, partly flexed to the right.

Burial No. 21, closely flexed on the right, had upon it a slab from the feet to the upper part of the thorax, covering them in the main but not completely. At the outer side of the knees was a small slab on edge.

Burial No. 22, partly flexed on the left and covered, with the exception of the pelvis, with masses of stone of very irregular shapes, in single layer in places, double in others.

Burial No. 23, a skeleton lying closely flexed on the right with the exception that the dexter thigh was at a right angle to the body, the tibia closely flexed against it, had upon it an arrangement of masses and slabs of stone (some of the latter on edge), rudely elliptical in outline, as shown in Fig. 59, 3 feet 3 inches long and about 2 feet in maximum width. These slabs and masses, which were variously of sandstone, limestone, claystone, and silicious rock, had their upper parts 2 feet below the surface, the pit in which the burial lay being 3 feet 3 inches deep. These slabs, as may be seen in the illustration, did not completely cover the skeleton, the pelvis and part of the left thigh being exposed.

At this place, once in the second site described and twice in the last one, were found placements of stones and of slabs, having the appearance of graves, with which no sign of bones was discoverable.

One of these, 3.5 feet by about 3 feet, was a placement of masses and slabs of quartzite, of sandstone, of claystone, consisting of two large slabs on which were seven masses and slabs.

An extensive, irregular placement of masses and slabs, numerous but mostly small, lay a short distance below the surface.

Another in double layer in places, 8 feet 2 inches long and 2.5 feet at the middle, having one end 2 feet in diameter and one about 8 inches less, had precisely the appearance of the covering of a grave, but though the soil beneath was carefully spaded out to a considerable depth, nothing indicating the presence of a burial was encountered.

Apart from remains in these three sites were three arrowheads of flint, two with stems, one triangular, and a small chisel of indurated shale.

MOUNDS ON THE SNODGRASS PLACE, JACKSON COUNTY, ALABAMA.

Almost on the river-bank at the Snodgrass Place, which is owned by Mrs. Texas Snodgrass, of Scotsboro, Ala., are two mounds which have suffered through wash and wear, the smaller only a remnant, having dwellings upon it.

The larger, which has been quadrangular with a flat top, has a roadway upon it to afford access to a large frame structure covering much of its summit-plateau. The height of the mound is 19 feet; its basal diameters are 118 feet and 155 feet.

Though Mrs. Snodgrass most generously put these mounds at our disposal, we felt that investigation of them would be useless.



FIG. 50.—Burial No. 23. A placement of masses of stone, 3 feet 3 inches by 2 feet, over all, lying over a skeleton. Garland's Ferry, Ala.

COX MOUND AND DWELLING-SITE, JACKSON COUNTY, ALABAMA.

On the river-bank, in a large, cultivated field forming part of the estate of Mr. J. H. Cameron, who resides somewhat back on the slope of the nearby hills, is a mound about 13 feet in height, having a flat top, known as the Cox mound. Its diameters of base are 90 feet and 105 feet. The mound has upon it a frame structure used as a barn for Mr. Cameron's cattle, and for this reason and owing to its uninviting shape, no investigation of it was attempted.

The Cox mound stands upon a low ridge extending along the river-bank. On the eastern side of the mound, this ridge, which there is about 75 yards in width, has abundantly on the surface for a distance of about 250 yards, flint pebbles, broken and whole; chips of flint; fragments of musselshells; and, to a less extent, potsherds; broken agricultural tools of limestone; arrowheads and knives of flint, broken and whole, a few of the arrowheads being triangular, some having stems. The sherds were undecorated, bore incised, elementary designs, or had small checks or oblong impressions conferred with a stamp.

All that part of the ridge on which the debris lay was carefully tested with the aid of a steel rod and by numerous trial-holes. Made-ground extended in places to a depth of nearly 5 feet, though, as a rule, soil blackened by organic matter was not found at more than from 2 to 2.5 feet below the surface. Under this was brown sand containing shells, extending to undisturbed, underlying sand.

All this made-ground was found to be shallower beyond an area extending about 100 yards easterly from the mound, in which most of the burials proved to be, though widely-scattered ones were met throughout the whole eastern part of the ridge on which midden debris was apparent on the surface.

Burials were at all depths, some nearly 5 feet down, and evidently had been made in graves during successive periods of the accumulation of the made-ground above them.

The limits of the graves, in nearly every instance, were impossible to distinguish, as they had been filled with the material removed in the process of making them, and the made-ground of the site had not been deposited in layers.

Very few graves had been made in the upper dark material and continued into the brown sand and shells, otherwise, there would have been ample means to contrast the black soil with the brown sand, but seemed to have been dug almost exclusively either in the dark, midden material above, without going deeper, or in the sand and shell beneath it.

Above some of the burials at this place, at different depths from the surface, a layer of clay, reddened by heat, sometimes mingled with ashes and charcoal, had been placed. This red layer extended beyond the limits of such graves where it was found, and consequently seemed to have been on top of the grave and on the level of the site at the time the grave was made. The depth below the surface at which these layers were found by us can readily be explained by the growth of midden deposit after the period of the making of the grave.

This clay did not mark the site of fires made above the graves, but had been brought from elsewhere, as the clay and the ashes were sometimes mingled.

Thirty burials (fifteen adults, four adolescents, nine children, one disturbance, one large deposit of bones) were encountered east of the mound. We shall describe in detail all having artifacts in association, as well as burials having other features of interest.

Burial No. 1, a young child having at the right forearm twenty-six shells (*Oliva sayana*) pierced for use as beads. At the left of the head was an undecorated pot of about two quarts' capacity, alongside which was a small, undecorated

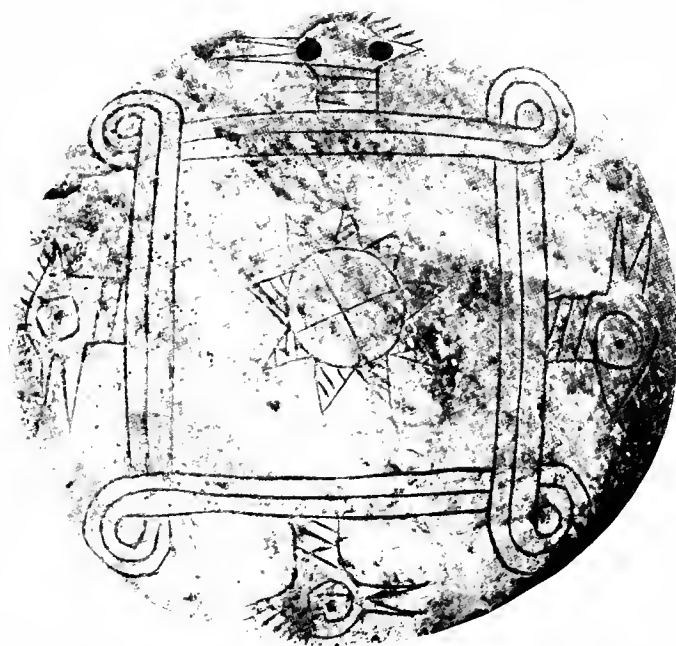


FIG. 60.—Gorget of shell. With Burial No. 4. Near the Cox mound, Ala. (About full size.)

one, evidently intended for a child, having over the opening, a large musselshell which fell to bits on removal. In connection with this burial was the reddened clay we have described, mingled with which were fragments of matting, suggesting the remains of a wigwam.

Burial No. 3, an infant lying immediately beneath a mass of stone completely covering the remains, no great space being required as the thigh-bone of the little skeleton was but 3.25 inches in length. At the neck were shell beads.

Burial No. 4, adolescent, partly flexed to the left, the trunk slanting diagonally up the side of the grave. At each ear was the columella of a conch having the upper whorls of the spire still upon it, which had been used as an ear-ornament by being thrust through the lobe of the ear. At the beak of one of them is a perforation.

Near the left humerus, where no doubt it had fallen from the chest, was a shell gorget (Fig. 60), the design engraved on the convex side, a somewhat

unusual feature. This design is of a well-known class described and figured by Putnam¹ and exhaustively treated by Holmes,² on which is represented a figure made up of lines symmetrically looped at the corners, which Holmes points out as similar in shape to one found in a Mexican codex. Enclosed in this interesting square often are crosses and sun-symbols. Invariably at each of the four sides of the square is the head of a bird, presumably the ivory-bill woodpecker, of which we have had considerable to say in connection with our work at Moundville,³ Ala. The Canada Indians made coronets of these bills for their chiefs and paid two or even three deerskins for a single bill, not having the birds in their cold climate.

Shell beads, twenty-one in all, oblate-spheroidal, the largest having a diameter of .7 inch, lay with the gorget and at the right wrist.

Burial No. 6, the trunk on the back, the thighs diagonally upward to the left, the legs closely flexed on the thighs.

Burial No. 7, a deposit of bones the upper part of which, near the surface, may in part have been plowed away. Twelve skulls, one of which was saved, were recovered from it, and seventeen pairs of femora, having belonged to fourteen adults, one adolescent, two children. With this deposit were *Marginella* shells used as beads, many of which were within a skull.

Burial No. 9, at a depth of 3 feet to the upper surface, in contact, lay two masses of ferruginous sandstone, each about 5 inches thick, covering a space 28 inches by 16 inches, on which lay the bones of a young infant having pierced *Marginella* shells at the neck and thorax.

Burial No. 12, the trunk in a semi-reclining position, the head uppermost, bent over and resting against the knees, the thighs being vertical and having the legs closely flexed against them. The right humerus was alongside the body, the forearm at a right angle to it, at the side of the pelvis; the left humerus lay downward along the thorax, the forearm partly flexed and crossing the pelvis.

Burial No. 14, partly flexed on the right, having shell beads at the upper part of the thorax.

Burial No. 17, reclining against the side of the pit, the thighs closely flexed on the trunk, the legs against the thighs, the right arm and forearm along the trunk, the left arm along the thorax, the forearm closely flexed on it.

Burial No. 18, partly flexed to the left, having shell beads from below the knees to the ankles.

Burial No. 19, the trunk lying on the back, the thighs flexed diagonally upward to the left, the legs closely flexed on them; the humeri alongside the body, the forearms slightly flexed, bringing the hands on the pelvis.

Burial No. 20, a child having marine shells (*Olivella*), used as beads and mingled with other shell beads at the neck.

¹ Eleventh Ann. Rep. Peabody Museum, p. 308 *et seq.*

² "Art in Shell of the Ancient Americans," p. 280 *et seq.*, Plates LVIII, LIX.

³ "Certain Aboriginal Remains of the Black Warrior River," Journ. Acad. Nat. Sci. Phila., Vol. XIII, p. 138 *et seq.*, *et al.*

Burial No. 21, a child having shell beads at the neck.

Burial No. 27, partly flexed to the left, small shell beads at each wrist, also on the pelvis where, in addition, was a discoidal bead of indurated shale, 1.4 inch in diameter and .6 inch in thickness, having a central perforation; small beads also were near the knees.

Burial No. 28, adolescent, part of the skeleton showing disturbance, though no cause was apparent. At the right elbow were four vessels of very coarse, shell-tempered ware; a small, undecorated one within a pot having no decoration; an undecorated bowl and a bottle having rudely incised around the body a current scroll entwining a series of knobs.



FIG. 61.—Bowl of earthenware. Near the Cox Mound, Ala. (Diam. 13.7 inches.)

Burial No. 30, a child having pierced *Marginella* shells at the neck.

Burials hitherto undescribed were as follows: adults, closely flexed on the right, 2; closely flexed on the left, 1; closely flexed to the left, 1; partly flexed to the right, 1; partly flexed to the left, 2; partly flexed on the right, 1; adolescents, partly flexed to the right, 1; partly flexed on the left, 1; children, 3; a disturbed burial.

Articles placed with the dead at this place seemed to be in the main objects wrought from shell, though one could wish the fashion had been more comprehensive. A marked feature was the attention shown to children, for while but three out of fifteen adults had artifacts in association, six children out of nine had been thus favored.

Found in the digging, but apart from burials, were: two bowls, undecorated and of very coarse ware, one within the other; parts of a gorget of shell, probably scattered by some disturbance, which, restored as to a small part not recovered

proved to belong to the same class as the one described from this place, and also has its decoration on the convex side; half of an undecorated gorget of shell found with the other; a part of a good-sized bowl, restored and shown in Fig. 61,



FIG. 62.—Pottery with complicated stamp decoration. Near the Cox Mound, Ala. (Full size.)

found in fragments just below the surface and bearing a decoration often seen on earthenware farther south in Alabama; a sherd bearing a complicated stamp design (Fig. 62); a number of flint arrowheads and knives similar to those found on the surface; hoes wrought from musselshells, having each a perforation for a handle; an amulet of the bar variety, of impure hematite, having two perforations; a disc of copper with indentations around the margin, with opposite sides bent over in a way that one overlaps the other; a graceful eel of volcanic rock, somewhat more than 4 inches in length; red ochre pigment; arrow flakers of antler that had been set in handles, which, however, were not found.

The ridge west of the mound is of brown loam, the dark, midden soil, such as was present on the opposite side, being absent. There was almost no midden debris on the surface, except broken shells, and these were on only limited areas. Some digging was done in this part of the ridge, but though shells were mingled with the soil, showing aboriginal agency in the deposits, no burials were encountered.

This site, which evidently is pre-Columbian, or in all events dates from a period when the region had no intercourse with white people, has a considerable history as to human bones plowed up and artifacts discovered. We were informed by Mr. Cameron, the owner, that from the ridge where we dug, a bicave stone "as large as a saucer" had been taken, and we obtained from him a ceremonial axe of the hoc-shaped pattern, which he informed us had been found on the place.

MOUNDS ON THE RUDDER PLACE, JACKSON COUNTY, ALABAMA.

On property of Mr. Hugh Rudder, who lives somewhat back toward the hills, is a mound in sight from the river-bank, rectangular with a flat top, 13 feet high and 100 feet by 114 feet diameters of base. Two holes of considerable size were in the summit-plateau, but did not seem to have been deeply dug.

Within a few yards of this mound is the remnant of another, 2 or 3 feet in height, which, like the field from which it rises, was planted in wheat at the time of our visit. Permission not granted.

MOUNDS NEAR WIDOW'S CREEK, JACKSON COUNTY, ALABAMA.

On the left side of the river, going up, about one mile above its junction with Widow's creek, on the property of Mr. W. S. Allen, of Bridgeport, Ala., are two mounds in a cultivated field near the river bank, less than 50 yards apart.

MOUND A.

Mound A, which may have been under cultivation in the past, though not in recent years, was turtle-shaped, its height from the outside being 6.5 feet, its diameters 75 feet and 45 feet.

An excavation 12 feet square, sunk centrally to the base, which reached dark alluvial soil at a depth of 8 feet 4 inches, showed the mound to be composed of layers, some almost entirely of musselshells, some with a small proportion of earth mingled with shells, some having shells and material made up principally of ashes.

Our excavation gave evidence also that the height of the mound from the outside was misleading. The discrepancy was accounted for by the discovery that a considerable deposit of midden soil around the mound in the field had lessened the original altitude.

The base of the mound, on which was a fireplace, was carefully dug through in the hope of determining the presence of a pit or pits, but without success.

Burial No. 1, closely flexed on the left, had a slab over the feet, legs, and one hand. The skull was missing. Depth, 2 feet 8 inches.

Burial No. 2, adolescent extended on the back, 5 feet down. At the right ear were three pearls, and two were at the left ear, all comparatively small, four flat like discoidal beads, one an oblate sphere, all pierced. At the right wrist was a beautiful pearl, oblate-spheroidal in shape, .5 inch in diameter, without patina, having a beautiful luster. The piercing of this fine pearl and the effect of time had deprived it of any value it might have had as a gem. At a site where musselshells were as abundantly used as they seem to have been at this place, pearls doubtless were numerous.

Burial No. 3, at a depth of 3 feet 4 inches, six slabs and a fragment of stone had been irregularly placed. On these rested the skeleton of a child, above which, not always in contact but mingled with shells of the mound, had been piled other masses and slabs to almost within one foot of the surface.

In another part of the mound stones piled as for a grave were discovered, much resembling those found with Burial No. 3, but no bones lay beneath or among them. It is possible that the remains of an infant with which they had been placed had decayed away.

Burial No. 4. At a depth of 3 feet 8 inches were disturbed bones of an adult skeleton and scattered masses of rock, no cause for this being apparent.

Burial No. 5, covering that part of the base of the mound which was reached by our excavation (supposing the alluvial soil without shells to have been the base, which seems likely), was a layer of ash material and shells. At one part

of this layer were considerably fewer shells than were present in the other parts. In fact, the space in question was almost without them.

At this place a burial had been made, presumably when the mound was in a period of growth but still was insignificant in height. In the ash material without shell a grave 7.5 feet long and about 26 inches in maximum width had been dug to a depth of 1 foot 7 inches. Next, into the grave had been placed shells

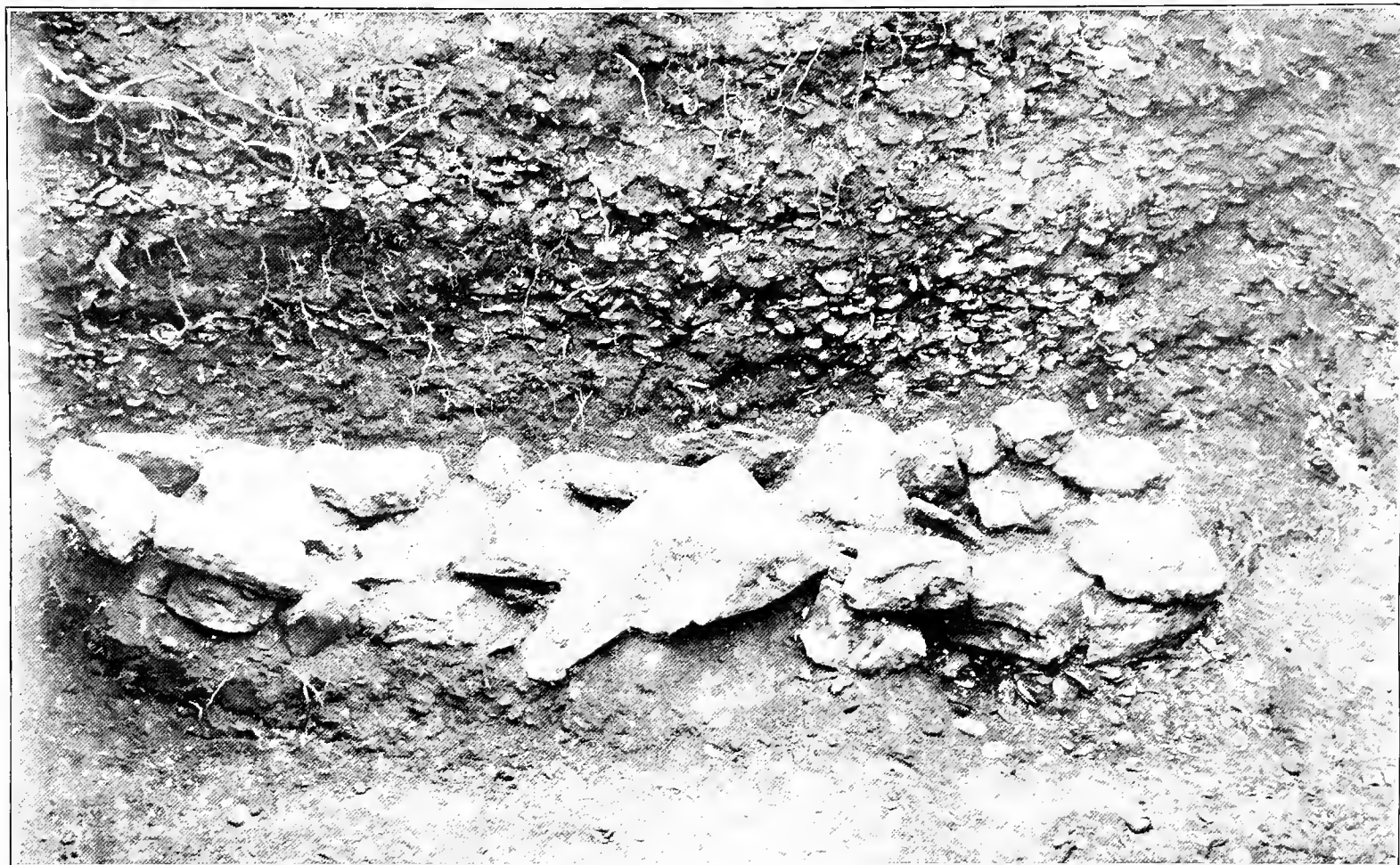


FIG. 63.—Burial No. 5. Not a box-grave but a placement of masses and slabs of stone, 7 feet 9 inches by 2 feet 8 inches, piled over a burial. Widow's Creek, Ala.

without admixture of foreign material, to a depth of about 7 inches, on which the body had been placed at full length on the back, arms along the sides of the trunk, and the space above and around had been filled with musselshells. Then above the burial had been piled a placement of slabs and masses variously of limestone, of sandstone, and seemingly of claystone, 7 feet 9 inches long and 2 feet 8 inches in maximum width, which was at the foot of the grave (Fig. 63). This placement consisted of masses and slabs in double layer which sometimes

rested on masses that had been placed here and there as supports at the sides, but which were far from continuous. As none of the covering stones resting on the supports was of a size sufficient to span the grave and hence lay diagonally, while others had been placed without side support, the upper surface of the placement was very irregular.

From the top of this stone grave to the surface of the mound was 5 feet 4 inches. That the grave had not been dug down from any part of the mound above was clearly shown by the presence of unbroken strata to the surface.

Here ends the record of the burials from the central excavation in Mound A.

On each side of this excavation, in the line of the longer axis of the mound, a hole 10 feet square was dug to the alluvial soil, resulting in the discovery of burials as follows:

Burial No. 6. Beneath a slab of claystone, 2 feet by 1.5 foot, that lay 10 inches below the surface, were the bones of a child, 2 inches of shell material lying between them and the slab.

Burial No. 7. Six feet from the surface, in what seemed to have been a pit, though its beginning could not be determined, the strata in the side excavations not being so clearly defined as they were in the central one, though the pit was distinctly marked at its base, lay a skeleton at full length on the back, the grave there averaging 6 feet 8 inches long and 2.5 feet wide.

On and around this skeleton was a placement of stones and slabs, as follows: A slab 35 inches long by 23 inches wide lay immediately over the trunk and skull of the skeleton. Placed diagonally, so that it slanted over that part of the great slab which covered the skull, was a thick mass of stone. Beginning somewhat above the shoulder, on the right side, there continued along the skeleton, in line to the knee, a slab, three small masses, and another slab, in the order named, the two slabs being placed on edge and projecting above the burial, the three masses simply being at its level. Beginning on a line with the top of the skull on the left side and continuing down almost to the pelvis was a long slab on edge rising above the burial, and a number of small masses of stone in line, all resting on the great slab that lay above the skull and the trunk of the skeleton. Above these masses, but not in contact with them, were other small masses in the shells.

In a rude semicircle around the feet and ankles, four masses of rock had been arranged. One of these, of sandstone, 16 inches by 12 inches, by 7 inches in thickness, flat on two opposite sides, had been used on both of them as a mortar, and also probably to crack nuts upon, as on one side the depression was accompanied by seven small pits and on the other by ten of them. This interesting stone has been placed on exhibition at The Academy of Natural Sciences.

From the pelvis down the skeleton was not covered.

Burial No. 8, a skeleton partly flexed on the right, 3 feet from the surface.

Burial No. 9. At full length on the back, 4 feet down, lay a skeleton having

a mass of stone over the head. Near the thorax was a slender, triangular arrow-head of flint.

Burial No. 10. Ten inches below the surface stones and slabs were reached, arranged in double layer in an irregular circle, 3 feet 5 inches by 2 feet 9 inches,



FIG. 64.—Burial No. 10. A placement of masses of stone and slabs, 3 feet 5 inches by 2 feet 9 inches, lying above the skeleton of a young child. Widow's Creek, Ala.

as shown in Fig. 64. Below these came a layer 2 inches in thickness, of the shell material of the mound lying on the skeleton of a young child, crushed almost flat.

Burial No. 11. Fourteen inches down were the bones of a child, and piled above them, in a very irregular way, were small masses of stone and slabs with a few larger ones.

Three feet from the surface was a placement consisting of masses and slabs of moderate size, having the outline of an irregular, horizontal triangle with an altitude of 6.5 feet and a base of 5 feet 8 inches. These stones and slabs, contiguous as a rule, were arranged, however, so that several spaces of moderate size were left uncovered. Below this layer was an occasional mass of stone, but not in sufficient number to be considered a second layer. No trace of bones lay above or below this assemblage of masses.

In one corner of one of the smaller excavations in this mound, extending 16 inches below the base, was a circular pit 30 inches in diameter, filled with ashes and fragments of rock.

Apart from human remains in this mound were found separately a number of implements of bone, some in excellent condition; a celt of indurated shale, 5.6 inches in length; a circular mass of sandstone about the size of a fist, having on two opposite sides a pit probably to aid in cracking nuts; many portions of antler partly wrought; arrow flakers of antler, whose handles, however, were not found; an ear-ornament of antler, having below the head a groove showing polish through wear (Fig. 65).



FIG. 65.—Ear-plug of antler.
Mound A, Widow's Creek, Ala.
(Full size.)

MOUND B.

Mound B, 80 feet by 60 feet in diameters of base, had a height of 3.5 feet, measured from the exterior, though the distance from its summit to undisturbed, alluvial soil was 2 feet greater. This mound, long plowed over and much extended, was composed of musselshells in a way similar to Mound A.

Three burials near the surface had been plowed away in places. Burial No. 4, a child, and Burials Nos. 5 and 6, all superficial, were closely flexed on the left.

Burial No. 7, a skeleton lying on the right side, almost at full length, the thighs, however, slightly flexed, forming an obtuse angle with the trunk, the legs continuing down in a line parallel to the long axis of the trunk. The right humerus was in front of the face, the forearm under the upper part of the cranium. The left humerus formed a right angle with the trunk, the forearm flexed, bringing the hand to the forehead. The skull, of a yellow color, was crushed into small fragments and flat, resembling a squash that has been trampled upon.

This burial was covered by a placement of stones and slabs in double thickness, 8 feet long, 3 feet 9 inches at one end and 2 feet 9 inches at the other, much similar to the arrangement described in connection with Burial No. 5, Mound A, at this place, though the one in Mound B showed more irregularity. Its upper parts lay 1.5 foot below the surface.

This burial had been a dual one. Between the two layers of slabs and masses that covered Burial No. 7 there lay at the head end of the grave, in complete disorder, a flattened mingling of the bones of an adult skeleton.

Three feet from the top of the mound lay masses of stone and slabs with spaces between. Above these, here and there, in no evident order, were masses of stone. No disturbance was apparent and no burial was present.

Apart from bones were found, in Mound B, a small piercing implement of bone; a rude, triangular arrowhead of flint; a coarse, cutting implement of sandstone; part of an earthenware pipe.

MOUNDS NEAR WILLIAMS LANDING, JACKSON COUNTY, ALABAMA.

There are four mounds and a shell-heap on the property of Judge J. J. Williams who lives upon it, somewhat back in the hills.

MOUND A.

The steamboat landing on this estate is known as Williams Landing, otherwise Lone Oak Landing. About three-eighths of a mile N. from this landing, on the crest of a low hill rising from bottom-land, was a symmetrical mound in woods, overlooking the river, 6.5 feet in height and 45 feet in diameter of its circular base. Around it was a trench, almost filled at the time of our visit, whence came the raw clay and pebbles of which the mound mainly was composed. In the center of the summit was a small hole which proved to have been carried down but a short distance. Around its margin were masses of stone which evidently had been taken from the mound.

Two feet four inches from the top was a bed of slabs (such as we tested were of limestone), 6 feet 9 inches in length by 4 feet 7 inches in width, somewhat disturbed by the previous digging. When found, this placement had an irregular outline; it was composed of slabs in double thickness in places, and of single slabs and masses of rock in others, while in some parts no slabs or masses were present.

On this had rested a burial, fragments of which, disturbed by the former digging, remained.

Four feet eight inches down, beyond any chance of disarrangement by the previous diggers, were a few fragments of human bones.

Near the center of the base, which could be distinguished because at that point ended the slight stratification that prevailed in the mound and red clay of uniform shade began, lay the bones of a child closely flexed to the right, flattened to an extent almost to resemble the skeleton of a fossil fish. Directly on these bones slabs had been placed, and above these again were masses of stone piled irregularly, not in contact but surrounded by earth.

Almost contiguous to this burial, at the same level, lay a skeleton closely flexed on the right, having the humeri partly in front of the thorax and the arms closely flexed, bringing the hands up in front to the face. The thighs and tibiae, as in the case of a closely flexed burial, were drawn up parallel to the body.

Back of the skull and behind the pelvis were two small masses of stone, and somewhat in front of each of these masses, as if possibly they had been intended

as supports, were two slabs that perhaps had slipped from the masses which otherwise would have held them diagonally over parts of the skeleton. As it was, most of one slab which would have covered the skull and much of the upper part of the trunk, lay forward from them, covering only the facial part of the skull, and the hands. The lower slab, which had slipped less (if displacement occurred), lay over the pelvis, the lower ribs, and most of the lower extremities. There remained uncovered, then, much of the skull, the upper part of the trunk, and the knees.

This burial with its covering occupied a space 3 feet 7 inches long and was 2 feet 3 inches in maximum width.

Beginning at about the center of the base and extending outward was a pit, oblong with rounded corners, 5.5 feet in length and 3 feet 7 inches in width, having a depth in the undisturbed clay below the base of 1 foot 2 inches. Presumably this pit had been made prior to the building of the mound and had not been dug down through it, as undisturbed, local strata were noted almost above it. Most careful search in this pit, which was cleared with the aid of trowels, failed to discover any trace of bones, which beyond doubt had decayed away.

MOUNDS B AND C.

Within a short distance of Mound A were Mounds B and C, respectively 2 feet 7 inches high and 32 feet in diameter, and 3 feet in height with a diameter of 50 feet. Considerable digging in the larger mound was unrewarded.

MOUND D.

Mound D, about one-half mile NNE. from Williams Landing, was on sloping ground just above the flat bottom-land, in full view from the river. This mound had a circular base about 50 feet in diameter and was 6 feet 8 inches in height, according to a measurement taken from the outside. A second measurement made from the summit to the base of the mound showed that the height as ascertained from the outside was about correct.

Previous to our coming a hole had been dug in this mound nearly at the center of the top, about 3 feet by 5 feet in size and presumably of considerable depth. From it had been thrown out a number of masses of limestone. There was evidence also that a small trench had been dug in from the outside, which, however, had been filled.

The central bulk of the mound was surrounded and dug out by us to below the base, the size of the excavation being 37 feet by 40 feet, which practically included all the interesting part of it, judging from the fact that with the exception of one superficial burial none was reached until considerable digging toward the inner part had been done.

The mound proved to be of rich, dark, loamy clay, evidently the deposit of a dwelling-site which had overlain the field to a depth of 6 inches, as was apparent from the unmixed layer of midden material found at the base of the

mound, above which the mound had been built of the same material but considerably mingled, as would be expected when it was gathered from the field around.

This mound, which would have been of great interest had the aborigines who made it been endowed with a more liberal spirit in respect to their dead, had been built over a shallow grave containing a burial below the base of the mound. Some burials apparently had been deposited on the base, while others had been placed in the body of the mound, most of these being in grave-pits, some clearly let down from the surface, others being traceable some distance up, but not all the way.

In all, thirty-six burials were found, no account being taken of bones scattered by the previous digging, by the sinking of pits in aboriginal times, by the roots of a tree which grew well up on the mound, or of small portions of skeletons buried by the aborigines themselves, some of which, probably similar to interments found in other mounds, were bones that had dropped away from skeletons previous to the time of burial and later were gathered and interred.

In the case of Burial No. 30 in this mound, an interesting example of the aboriginal interment of fragmentary remains is shown.

The grave below the base of the mound (Burial No. 36), to which reference has been made, was 7 feet 10 inches to the bottom of its pit from the level of the summit of the mound, the pit itself cutting through the 6 inches of midden soil marking the base and entering the undisturbed, red clay a distance of 1.5 foot, the limits of the grave being very clearly defined in the raw clay. The depth of the original midden deposit on the field, of which we have spoken, was conclusively proved by the presence of the red clay around the sides of the grave which had been thrown out when it was dug and had not been used in filling the grave. This red clay lay over the 6 inches of surface midden debris on which it had been thrown.

The grave, which was 6 feet 8 inches long by 3 feet 2 inches wide, began about 4.5 feet from what we considered to be the center of the base of the mound, radiating from it, the head of the grave nearest the center, as shown by the presence of a fragment of skull about one inch square, which was the only part of the skeleton found, even no teeth being present, though the entire contents of the grave was removed with a trowel.

Over this grave, as stated, having the red clay that had been removed in its making spread for a considerable distance around it, the mound had been built, its inception being presumably at the time of the interment, since the grave was filled, not with the clay that had been taken out, but with the midden material of which the mound was made.

Practically on the center of the base of the mound was a deposit of calcined human bones, 3.5 feet by 1 foot 9 inches and 3 inches in maximum thickness. These bones, reduced to fine particles, bore no trace of order and were in the vicinity of no sign of fire. This deposit (Burial No. 35) is classed as one burial, though it is probable that the remains of two individuals were present, side by

side, as a space 8 inches broad, on which were only scattered fragments, divided the deposit into two parts. These cremated remains presumably were placed there at the time the erection of the mound was commenced.

In addition to Burials Nos. 34 and 35, the following, some of which lay on the base while others were in grave-pits, seem to demand detailed description.

Burial No. 1, 3.5 feet under the slope of the mound, was a placement composed of eight slabs, some of limestone, some of silicious, veined material, evenly and symmetrically laid in contact, which measured approximately 4.5 feet in length



FIG. 66.—Burial No. 1. A skeleton lying upon a flat bed of slabs, 4 feet 6 inches by 2 feet. Mound D, Williams Landing, Ala.

and 2 feet at the broadest part, where a single small slab had been placed at each side of the general alignment to accommodate the increased space demanded by the trunk and the knees.

The skeleton lay closely flexed on the right, the dexter humerus under the chest, its forearm flexed, bringing the hand in front of the face, the left humerus down, having the forearm slightly flexed into the pelvis. The thighs were up against the body, having the tibiae flexed on them (Fig. 66).

Burial No. 7, 4 feet 9 inches below the slope of the mound, was a bed of thin slabs, closely laid in a double layer, 5 feet 6 inches long by 3 feet wide, completely protecting a skeleton partly flexed on the right, which rested immediately below. Over the lower part of the skeleton and the covering of slabs, and somewhat above the latter, were several masses of rock in the soil, separate and without arrangement. The right humerus of the skeleton lay under the thorax, somewhat forward, the forearm partly flexed, bringing the hand to the right knee, the left upper arm extended downward in front of the thorax, the forearm being at a right angle back on the trunk, not forward as one would expect it to be. Back of the skull was a bone pin, much decayed, that probably had been in the hair.

Burials Nos. 8, 14, 15, a child and two younger children, respectively, in shallow graves extending down from the surface of the mound, the bones covered with deposits of musselshells, above which to the surface were musselshells mingled with earth.

Burial No. 13, a grave-pit 5.5 feet deep, 3.5 feet by slightly more than 2 feet, was clearly traceable from, or almost from, the surface of the mound, extending 9 inches into undisturbed clay below the base. This pit contained a skeleton lying closely flexed on the right.

Burial No. 17, the skeleton of a child lying near the surface, doubtless in a grave but having no musselshells in association.

Burial No. 21, a pit clearly defined, at the bottom of which, 3.5 feet down, was a skeleton lying closely flexed on the left, the pit being filled with soil and musselshells mingled

Burial No. 25. This burial was of a class to be described later in this report in connection with the Hampton Place, Hamilton County, Tenn., where burials, closely flexed, were placed almost vertically in narrow pits, the pelvis at the bottom of the pit, the arms and legs flexed against the trunk.

Burial No. 27, 2 feet 8 inches below the sloping surface of the mound, beginning about 7 feet from the center, was a bed of slabs of limestone, 4 feet 7 inches by 3 feet 4 inches, not level as was the placement of slabs with Burial No. 7, but having an irregular surface. There seemed in this case, moreover, to be a tendency toward the enclosed burial as found in the stone box-graves, inasmuch as, in addition to the bed of slabs, there were an upright slab at the head of the bed of horizontal slabs, and another, also vertical, at the side to the left of the slabs but at a short distance from them. Opposite this one had been placed a narrow slab and a mass in such manner that the part of the placement containing the upper portion of the skeleton was surrounded to some extent.

The skeleton lay on its left side, the left femur closely flexed on the trunk, the tibia flexed against the thigh. The right femur was flexed to about a right angle with the body, the tibia closely flexed; the right arm and forearm extended diagonally down and forward, the hand being below the left knee; the left arm and forearm were directed in line along the front of the trunk.

Burial No. 30, at the bottom of a pit about 4.5 feet deep, was a stone grave covered to the top of the pit with soil having an admixture of shell and showing the pit had been dug from the surface down. The stone grave, 3 feet 6 inches in length and slightly more than 2 feet in maximum width, had a partial covering and on one side two slabs standing obliquely, with an opening between them at the lower part but in contact at the upper edges. The covering slabs, except



FIG. 67.—Burial No. 30. A placement of slabs 3 feet 6 inches by 2 feet, over all, above a skeleton with which had been interred parts of another skull, visible in the illustration. Mound D, Williams Landing, Ala.

in one instance, did not rest on the upright ones, being immediately on the bones which were on the ground.

The skeleton lay closely flexed on the right, both humeri along the trunk but somewhat toward the front, the forearms flexed to them, bringing the hands in front of the face, though not covering it. The skull, over which no slab had been placed, may be seen in the photograph (Fig. 67).

A curious feature connected with this burial was that between its back and the oblique slabs was a space which had been filled by placing side by side, their upper surfaces exposed, two large fragments of the skull-cap of another skeleton. These also show in the photograph, as they, too, were without covering of slabs. The fragments were of a darker shade than the skeleton, apparently through long exposure or the result of a stain.

Burial No. 31, partly flexed on the left, was the only one from this mound whose skull was in a condition to save.

Burial No. 32, in the sloping side of the mound, was a pit 3 feet 4 inches deep, the lower part 3 feet 9 inches long and 2 feet 9 inches in width, very distinctly marked and sharply rectangular, though it could not be determined with certainty whether the pit began at the surface or somewhat below it. On the base of this pit lay a skeleton closely flexed on the left, the right humerus extending along the thorax, the forearm closely flexed on the humerus; the left arm and forearm arranged in like manner except they lay below the thorax.

Above the skeleton, to a depth of about 10 inches, the grave had been filled with musselshells and masses of rock, having no admixture of soil. Above the skull, but having a layer of shells between, were three masses of fossiliferous, silicious vein material, one about the size of a child's head, one about five times larger, and one intermediate. The upper surfaces of these masses were in line with the top of the shell deposit. About at the level of their bases was a slab of limestone 1 foot 8 inches by 1 foot 2 inches, by 2 inches in thickness, having shells above it and below it. To one side of this slab was a somewhat smaller one of the same material, at a slightly lower level. On top of the shells was a small mass of rock. None of these slabs or masses was in contact with the bones.

Burial No. 34, extended on the back, lay almost at the center of the mound, on or slightly above the base. No mark of fire was near it, though at one spot the pelvis was charred and the upper part of the skull lay in fragments, badly burnt, the lower jaw, however, being intact. This burial lay but a short distance from the deposit of calcined bones, and may have been affected by the fire that reduced them, which, however, must have been elsewhere than in the mound.

The other burials in the mound consisted of twenty-nine adults and seven children, disposed as follows: at full length on the back, closely flexed on the right and on the left, closely flexed to the right, partly flexed on the right and on the left, partly flexed to the right.

No attempt at orientation was noticeable in the burials in this mound.

Besides objects already described in connection with burials, there were found: small bits of mica near the skull of an adult skeleton; two arrowheads of flint, one at the pelvis of an adult burial, one near the shoulder of another; a few badly-decayed shell beads near the neck of a child.

Apart from the burials described, but often near scattered bones, were: seven beads of shell, found together; fifteen arrowheads or in some instances

possibly small knives, of flint, some carelessly made, one of the better ones being shown in Fig. 68; two ornaments of sheet-copper, found separately, each 1.75 inch in diameter, bosses with central depressions, having each a central perforation; fragments of sheet-copper found in three instances; an ornament made of impure graphite, similar in shape to those of sheet-copper, but thicker, 1.5 inch in diameter (Fig. 69).



FIG. 68.—Arrowpoint of flint. Mound D, Williams Landing, Ala. (Full size.)



FIG. 69.—Ornament of impure graphite. Mound D, Williams Landing, Ala. (Full size.)

Extending from the base of the mound a few inches into the yellow, bottom soil was a circular deposit of water-worn pebbles, broken and whole, the largest about the size of two clenched hands.

The shell-heap, which was but a few yards from the river, after the first foot had been dug away, proved to be almost solid shell. Its investigation was not further pursued.

MOUNDS AND DWELLING-SITE ON BRIDGEPORT, OR LONG, ISLAND, JACKSON COUNTY, ALABAMA, AND MARION COUNTY, TENNESSEE.

Bridgeport Island, or Long Island, as it is variously called, has the lower end in Alabama and the upper part in Tennessee, the state line passing between the mounds on the island, the large mound being in Tennessee, the two smaller ones in Alabama.

The mounds, three in number, in sight from the water, on the eastern side of the island, near its lower end, are near together and form a triangle of which the largest mound is the apex. Bridgeport Island belongs to Mr. John F. Brown, who lives nearby on the mainland. Mr. Brown does not desire any digging on the place.

The largest mound, on which is a small frame structure, has been quadrangular with flat top, evidently a domiciliary mound. Its height is slightly more than 24 feet, its base is about 130 feet square.

The mound farthest from the water has a circular base about 55 feet in diameter and is 7 feet high. It is nearly flat on the summit at present, but has the appearance of having been dug into, and may have had, at one time a more conical outline.

Nearest the water is a mound which presumably has been leveled to some extent to accommodate a barn standing on it. Also, it has been greatly trampled by cattle and is of very irregular outline. Its present height is 9 feet; its diameter, about 110 feet.

Near the mounds is a dwelling-site with much shell on the surface, and some other debris, including fragments of pottery.

Mr. Brown, the owner of this place, has some celts and pottery vessels dug from it, the vessels being of inferior ware and of commonplace form.

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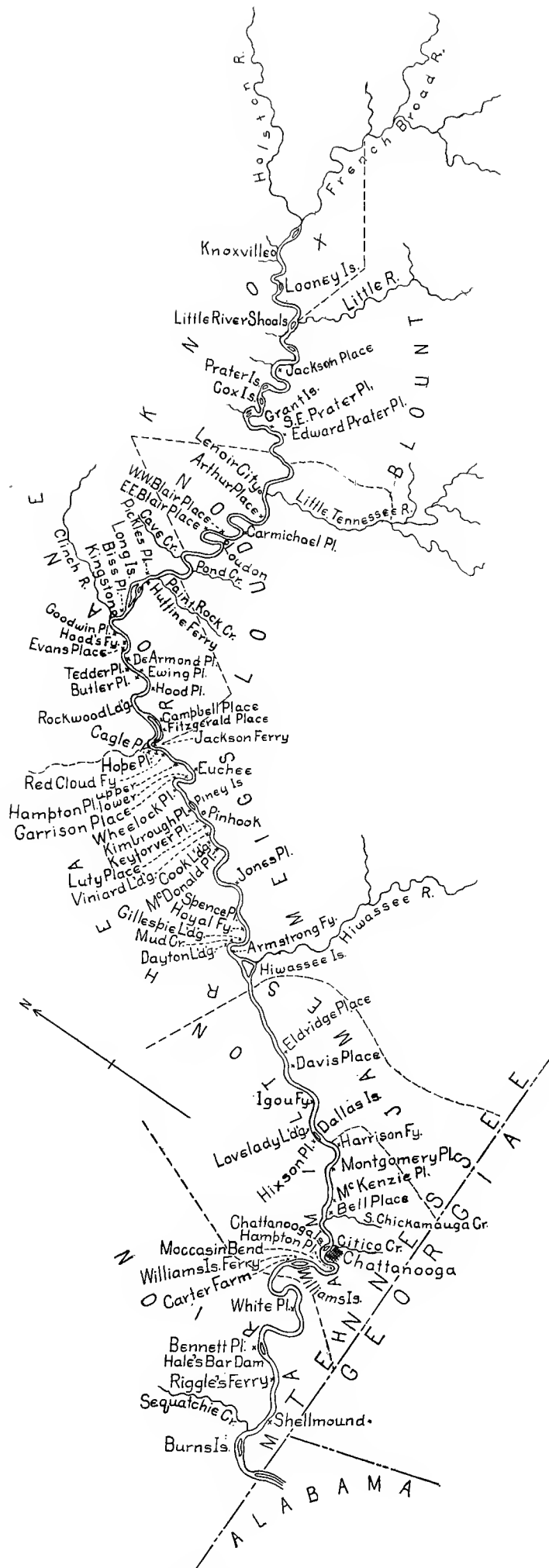
PART III.

TENNESSEE RIVER IN EASTERN TENNESSEE.

Our expedition has now left Alabama and the concluding part of the investigation is in eastern Tennessee.

Mounds and Sites.

- Dwelling-site on Burns Island, Marion County.
- Mound and Dwelling-site at the Mouth of Sequatchie Creek, Marion County.
- Dwelling-sites at Shellmound, Marion County.
- Dwelling-sites near Riggles Ferry, Marion County.
- Mounds on the Bennett Place, Marion County.
- Mound and Dwelling-site on the White Place, Marion County.
- Williams Island, Hamilton County.
- Mounds on the Carter Farm, Hamilton County.
- Mound and Dwelling-site at Williams Island Ferry, Hamilton County.
- Dwelling-site and Mounds on the Hampton Place, Hamilton County.
- Dwelling-site on Chattanooga Island, Hamilton County.
- Citico Mound and Site, Hamilton County.
- Mound on the Bell Place, Hamilton County.
- Mounds on the McKenzie Place, Hamilton County.
- Mounds below Harrison Ferry, Hamilton County.
- Mound on the Hixson Place, Hamilton County.
- Mound at Lovelady Landing, Hamilton County.
- Mound near Lovelady Landing, Hamilton County.
- Mound below Igou Ferry, Hamilton County.
- Dwelling-site on the Davis Place, James County.
- Mound and Site on the Eldridge Place, James County.
- Mounds and Sites on Hiwassee Island, Meigs County.
- Mounds near Armstrong Ferry, Meigs County.
- Mounds near mouth of Mud Creek, Rhea County.
- Mounds near Gillespie Landing, Rhea County.
- Mound near Hoyal Ferry, Rhea County.
- Mounds on the Spence Place, Rhea County.



MAP OF TENNESSEE RIVER IN EASTERN TENNESSEE

Scale in miles
0 5 10 20 30
1915

Mound on the Jones Place, Meigs County.
Mound on the McDonald Place, Rhea County.
Mounds near Cook Landing, Rhea County.
Mounds near Viniard Landing, Rhea County.
Mound on the Luty Place, Rhea County.
Mound on the Keyforver Place, Rhea County.
Mounds on the Kimbrough Place, Rhea County.
Mounds on the Wheelock Place, Rhea County.
Mounds on the Garrison Place, Rhea County.
Mounds on the Lower Hampton Place, Rhea County.
Mounds at Euchee, Meigs County.
Mounds on the Upper Hampton Place, Rhea County.
Mound near Red Cloud Ferry, Rhea County.
Mounds on the Hope Place, Rhea County.
Mounds on the Cagle Place, Rhea County.
Mounds near Jackson Ferry, Meigs and Roane Counties.
Mounds on the Fitzgerald Place, Roane County.
Mounds on the Campbell Place, Roane County.
Mounds near Rockwood Landing, Roane County.
Mound on the Hood Place, Roane County.
Mounds on the Butler Place, Roane County.
Mounds on the Ewing Place, Roane County.
Mounds on the Tedder Place, Roane County.
Mounds on the De Armond Place, Roane County.
Mounds on the Evans Place, Roane County.
Mounds near Hood's Ferry, Roane County.
Mounds on the Goodwin Place, Roane County.
Mounds on the Biss Place, Roane County.
Mounds on Long Island, Roane County.
Mounds near Huffine Ferry, Roane County.
Mound on the Pickles Place, Roane County.
Mounds near Paint Rock Creek, Roane County.
Mounds near mouth of Pond Creek, Loudon County.
Mound near Cave Creek, Roane County.
Mound on the E. E. Blair Place, Loudon County.
Mound on the W. W. Blair Place, Loudon County.
Mound opposite Loudon, Loudon County.
Mound on the Carmichael Place, Loudon County.
Mounds on the Arthur Place, Loudon County.
Mound near Lenoir City, Loudon County.
Mounds opposite Lenoir City, Loudon County.
Mounds on the Edward Prater Place, Blount County.
Dwelling-sites on the S. E. Prater Place, Blount County.

Dwelling-site on Grant Island, Blount County.
Dwelling-site on Cox Island, Knox County.
Dwelling-site on Prater Island, Knox County.
Mound and Site on the Jackson Place, Blount County.
Dwelling-site near Little River Shoals, Knox County.
Mound opposite Looney Island, Knox County.
Mound near Knoxville.

DWELLING-SITE ON BURNS ISLAND, MARION COUNTY.

Burns Island, belonging to Mr. Leroy Peoples, has upon it two rises on which are frame structures, and a dwelling-site with much shell upon it. Permission not granted.

MOUND AND DWELLING-SITE AT THE MOUTH OF SEQUATCHIE CREEK, MARION COUNTY.

On the lower side of Sequatchie creek, at its union with Tennessee river, is a large property belonging to Mr. W. S. Wilson, who resides somewhat back from it on the hills.

In full view from the river is a mound to some extent on sloping ground, so that measurement of height depends on whence it is taken. It would be safe to call the height of the mound 20 feet, approximately. This mound, doubtless domiciliary and quadrangular with a flat top in the past, at the time of our visit was of very irregular outline through cultivation of its sides and through wash. Its basal diameters were 205 feet and 185 feet.

In the hope of coming upon superficial burials, trial-holes were sunk in the summit-plateau, but with the exception of one, where a few fragments of human bones were encountered, nothing was found, and all the holes soon reached raw clay in which burials could hardly be expected.

The dwelling-site, most elevated near the river, extends for a considerable distance along the bank at varying widths to, or almost to, Sequatchie creek, the ending of the site being apparently about in line with the mound, which stands somewhat farther back from the river.

On the surface of the site were many fragments of shell and some of stone and of pottery, a number of bits of the latter having the check-stamp by way of decoration. Complete artifacts were almost absent, and even fragmentary ones were extremely scarce, a few arrowheads or knives being the only unbroken objects gathered superficially. Careful search over all the surface of the site came upon no human bones, nor could we learn of any history of the discovery of burials or of artifacts by those cultivating the place.

Two days' digging with eight men at work at this site failed to discover a cemetery, all the slight rises being carefully examined to no purpose.

The midden debris on this property extended deeper than is usually the case in sites of this kind, some of our trial-holes going between 7 and 8 feet without

reaching undisturbed soil, though the black earth filled with fragments of shell, of which the site was composed, was seldom deeper than 5 feet.

But three burials were encountered, all considerable distances apart and at varying depths, hence it is possible that the makers, who must have occupied the site a long time, however, were buried here and there throughout all its extent and that their remains could be reached only by long-continued digging which, under the circumstances, would not be wise to undertake.

The burials were not in graves the limits of which could be traced, but probably had been interred in rather shallow ones dug into the homogeneous deposit, which were filled by the return of the material taken out. The unusual depth of two of them can be accounted for by the probability that the growth of the site continued long after the burials were made.

Burial No. 1, a child, 6.5 feet deep, having at the neck four well-preserved shell beads, the largest of which, an oblate sphere, was .75 inch in diameter.

Burial No. 2, partly flexed to the right, lay at a depth of somewhat more than 2 feet, the pelvis resting in a good-sized fragment which had formed part of a large vessel of earthenware. The skeleton lay on the midden soil, earth blackened by admixture of organic matter, and having a considerable proportion of shell, but was covered at the sides and on top by a deposit of sand, 10 inches deep above the skeleton. On this sand, above the lower part of the trunk of the skeleton, three slabs of limestone had been placed, the largest 19 inches by 17 inches, and 2.5 inches thick. The others, much smaller, had been arranged, one partly beneath the large slab, the other beside it.

At the neck of the burial had been two large, tubular beads of sheet-copper, much of which had corroded away.

Near the head and shoulders of the skeleton was a placement of slabs of limestone in the form of a rude semicircle, consisting of a floor of slabs laid flat and surrounded on the peripheral part by other slabs, set vertically, whose upper surfaces, however, were far from being at a uniform level. The floor of this combination of slabs was not on a plane with the burial, which was considerably above it, at about a level with the top of the vertical slabs. The open part of the placement was away from the burial.

This placement, which had a basal diameter of about 2 feet and was 2 feet 9 inches across at the top, had a depth of about 10 inches. It contained no evident sign of a burial, though on part of its base was a dark deposit that may have been all that remained of the skeleton of an infant. We think it doubtful that this placement had any connection with the burial near which it was.

Burial No. 3, a child, lay 7.5 feet down on brown sand. Above it for 2.5 feet was sand similar to that on which the burial lay, but having a slight sprinkling of shell. Above this was the black soil and shell of the midden deposit. This burial must have been made at an early stage in the occupancy of the site.

Throughout the digging, apart from burials, were: a vessel of earthenware having two loop handles, and knobs at considerable distances apart, somewhat

below the opening; a number of rude spades of limestone, the largest about 10 inches in length; several flints with sharp points and cutting edges, the largest 4.75 inches in length; several small flint knives and serapers; half of a bar-amulet of limestone; an amulet of similar shape and material but without perforations; several pebbles worked into the form of celts, one 5 inches long, and given unusually sharp cutting edges; a small triangular point of flint; a curious tool wrought from the antler of an elk, slightly more than 6 inches in length (Fig. 70).

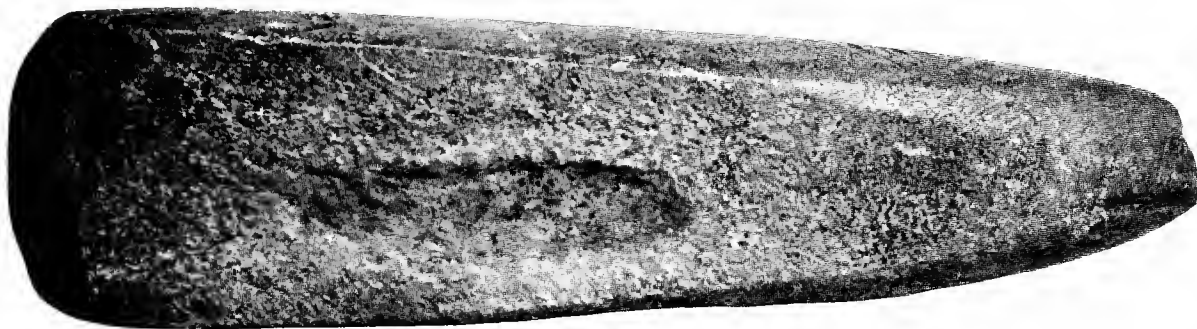


FIG. 70.—Implement of elk antler. Sequatchie creek, Tenn. (Full size.)

DWELLING-SITES AT SHELLMOUND, MARION COUNTY.

The name of this place is derived from a shell deposit formerly there, in or near which human bones and artifacts were found when the railroad, by laying its track, cleared away the shell-mound and adjoining area. The place, however, had been dug into for relics since the time of the Civil War, and probably before.

A short distance N. of W. from the railroad station, in a cultivated field along the railroad track, belonging to Mr. W. Y. Burnett, resident nearby, was a slight rise about 50 feet in diameter, on which were scattered fragments of shell and an occasional bit of stone. Considerable digging showed the soil to be dark with organic matter and having a considerable sprinkling of shells, the underlying, undisturbed ground being reached somewhat more than 2 feet from the surface.

A single trial-hole resulted in finding four burials, two immediately above two others, one being partly flexed to the left, the skull of which was saved; two partly flexed to the right, one being the bones of an adolescent. The fourth skeleton was that of a child. Considerable digging in and near a neighboring shell deposit was without success.

DWELLING-SITE NEAR RIGGLES FERRY, MARION COUNTY.

On property of Mr. William Gowins, who lives upon it, are a number of dwelling-sites having little on the surface except shell, extending for half a mile down from the ferry in fields bordering the river. Careful digging showed

these sites had but little depth and presumably were without burials. A fragment of pottery bearing a complicated-stamp decoration was picked up on the surface.

HALE'S BAR, DAM AND LOCK.

Next in our investigation along the Tennessee we reach the dam and lock (shown on the map) which recently has been constructed about 33 miles by water below the city of Chattanooga and which has transformed Tennessee river for about 35 miles up, by water, into a kind of pool, navigable the entire year, and furnishing power for various public and private utilities in Chattanooga and beyond.

The permanent rise in the river above this dam, while of great benefit in various ways, has submerged a number of aboriginal sites which our agent, descending the river before the dam was operative, had discovered for us, though some places in this region, fortunately for us, were on ground not affected by the water.

MOUNDS ON THE BENNETT PLACE, MARION COUNTY.

On the left-hand side of the river, going up, is a large property belonging to Mr. Samuel Bennett, who lives somewhat back from the river, on the hills. The lower-lying part of this great estate, abreast of which in the past was an island noted for aboriginal relics discovered there, has been submerged in common with the island since the completion of the great dam.

At the time of our visit (November, 1914) unusually low water prevailed in Tennessee river, and in consequence several small islands were noticeable in this submerged area, all in full view one from another, and two at least of which owed to aboriginal occupancy their height above the general level of the submerged ground.

MOUND A.

Mound A, that nearest the river, stood, when we were there, on ground oblong in outline with rounded corners, whose extent out of water was about 120 feet by 75 feet. The maximum height of this area was 4.5 feet above the level of the river at that time.

As it was impossible to decide from the exterior just what part of this area constituted the mound, preliminary excavations were made which soon showed we had to do with an aboriginal earthwork of a most unusual kind, in whose making the ceremonial use of fire had been accorded a prominent part.

An excavation 47 feet by 65 feet, including the highest part of the area above water, was then made, which showed that a part of this area, about 34 feet by 61 feet, had been devoted to burials and to ceremonies connected with fire, as may be seen on the plan of the mound (Fig. 71) made by Doctor Miller on the spot. It will also be noted that a few scattered burials were present outside the burnt area.



FIG. 71.—Plan of Mound A, showing burials. Bennett Place, Tenn.

Unfortunately, the base of the mound was not determined, as holes sunk below the level of the river quickly filled with water, though it was discovered that layers of clay reddened by heat and other evidence of the use of fire were present somewhat below water-level. However, as no burials were encountered at a depth greater than 3 feet, except a stone grave which will be described in due course, it is to be hoped that no feature of special importance has been omitted from our investigation of this interesting mound.

About 3 feet below the highest part of the elevation and, of course, correspondingly less under the slope, was clay reddened by heat. This red clay was not in a continuous layer, though it covered most of the area where it was found, but seemed to have been spread in various deposits ranging in maximum thickness between 2 or 3 and 16 inches, the last being very exceptional.

Between these deposits of reddened clay, some of which were much more extensive than others, were spaces of limited extent but sufficient to prevent the deposits from forming a continuous layer. In areas where burials were not present, however, and yet red clay was found, this clay was scattered over the surface and not arranged in heaps.

At about the same level, immediately beneath the deposits of burnt clay, sometimes individually, sometimes in groups, were burials, charred, burnt, or calcined, as the case might be. In spaces between the deposits of clay also were a few burials unaffected by fire, while some, partly covered, showed the effect of heat only where the clay had rested upon them. Moreover, several burials were found on the upper surface of the burnt clay. These burials, however, were only parts of skeletons—single skulls in two instances—which seemed to have been left over, as it were, then gathered and placed on the clay after it had been distributed above the other burials. That the clay was still hot when these fragmentary burials were placed upon it, was clearly shown by their under surfaces, which were burnt; their upper parts, be it said, showed no trace of fire.

The degree of heat-action exhibited by the bones seemed proportionate to the thickness of the reddened clay resting upon them, some being only charred, others much burnt, while many were calcined.

Most of the burials lay in anatomical order, though the bones were often in small fragments. A few of the burials, however, were only parts of skeletons which probably had been carried out as such from the dead-house and interred with entire skeletons the bones of which were still held together by ligaments.

Below such burials as were beneath the clay was a layer of black material, carbonized by heat, an inch or two in thickness. This material was the remains of matting, fabric, and other organic matter evident in the carbonized material, which probably constituted the lower part of the wrappings of the burials that had escaped the fiercer heat above, and also may have included matting placed ceremonially on the ground to receive the burials.

A measurement selected at random in the course of the excavation was as

follows: Clay reddened by fire, 6 inches in thickness; below the clay, bones in order but calcined and crushed, having a thickness of 2.5 inches; below the bones, carbonized remains of matting, etc., 1.25 inch thick.

Below burials not affected by fire this carbonized layer was not present, some of these burials lying upon a thin, dark line visible through the mound and which probably marked a period of occupancy. This layer showed the level at which the burnt burials lay and was smooth like a floor. The ground beneath the unburnt burials, however, was comparatively soft, while under those which lay below the reddened clay the soil was hardened though not discolored by heat.

We shall now discuss the method adopted by the aborigines for the cremation which probably took place at one time. The reddened clay was made up of masses of different sizes, some bearing imprints of reeds, grass, etc., and seemed to have formed part of a wattle-and-daub building or buildings, the burning of which in connection with aboriginal burials has been described in the case of an Arkansas mound,¹ and of the kind found by us at the base of the large mound on Little Island, South Carolina,² though this had not been destroyed by fire.

It seems likely, then, that a building or buildings, the limits of which, however, we were unable to determine by the presence of post-holes, were burnt and that some of the clay which fell at the collapse of the structure, while still intensely hot, was piled over the bones, covering most of the burials completely but leaving parts of some uncovered, and the areas shown on the plan containing no burials, which showed burnt clay to a lesser extent than the other parts, were spaces from which the clay had been gathered to heap over the burials, some of it, however, being left.

In different parts of the mound two trenches were encountered in connection with post-holes, but these trenches and holes penetrated the red clay we have described and the burials beneath it, and consequently were not of their period. They belonged, presumably, to another deposit of clay reddened by fire, which was encountered in the mound, about 14 inches above the one we have described. No burials lay immediately below this upper deposit, which differed from the lower one in that it was not heaped up in places, but extended evenly and had mingled with it charcoal, carbonized, coarse matting, thatching, etc. Presumably, after the mound had been filled in over the burial layer, another structure was erected which in its turn was destroyed by fire, though perhaps not intentionally, and in all events not in connection with burials.

Our theory as to the method pursued by the aborigines in connection with the bones showing evidence of the effect of heat is as follows: But little charcoal was present in or on the red clay above the burials, none being found over con-

¹ 12th An. Rep. Bur. Am. Ethn., p. 206 *et seq.*

² "Certain Aboriginal Mounds of the Coast of South Carolina," Journ. Acad. Nat. Sci. Phila., Vol. XI, p. 154.

siderable areas, and it is clear that the bones were burnt and calcined, not by the direct use of fire, but through contact with the heated clay placed upon them. This use of burnt clay in connection with burial rites is interestingly shown in connection with Burial No. 62, at the Citico Place, above Chattanooga, described in this report.

We shall now take up the description of each burial found in Mound A, prefacing the account with the statement that the entire deposit of red clay above the burials, and the burials themselves, were carefully removed with trowels, and that no account is taken of various scattered bones present in the mound, which did not seem of sufficient importance to be designated as burials. All burials not otherwise described showed the effects of heat to a greater or less extent. The reader will bear in mind that burials are of adults unless otherwise stated. As the plan clearly shows, the burials headed in all directions.

Burial No. 1, a child, lay outside the burial layer connected with the reddened clay and had been let down into a grave which cut through the upper layer of burnt earth. This burial, of course, showed no trace of the effect of heat.

Burial No. 2, a child, under the same conditions as the preceding one, had a hatchet of indurated shale, 6.2 inches long, at the left hand.

Burial No. 3, an infant in a grave like the others, having a few shell beads at the neck and, resting on the skull, what had been a handsome ornament of sheet-copper, representing an eagle.

Burial No. 4, a child, also in a grave apart from fire, having at the head an urn-shaped vessel of coarse ware, undecorated, of a capacity of about one quart.

Burial No. 5 lay extended on the back, the left arm and forearm along the body, the right forearm flexed back to the upper arm, which was somewhat away from the trunk.

Burial No. 6, on the back, the legs slightly flexed to the right.

Burial No. 7, closely flexed, face down, the knees slightly to the left. Charred fabric and beads of shell were at the pelvis. These beads, like all found in this mound, are in excellent condition, blackened by heat but not otherwise injured by it.

Burial No. 8, closely flexed on the right. Under the skull had been a mat made of reeds, and a flint knife 8.4 inches in length.

Burial No. 9, closely flexed to the left. The skull of this burial, which presumably had been in small fragments, probably had been thrown out in making one of the original trial-holes.

Burial No. 10, closely flexed on the left, one of the burials described as showing no trace of fire. At the skull was a chisel of indurated shale, 4.1 inches in length. At the feet was a small arrowpoint of flint.

Burial No. 11, closely flexed on the left. At the knee was a hatchet 5 inches in length, which was presented to Mr. Bennett, the owner of the property.

Burial No. 12, closely flexed on the right. Except on part of the trunk, the reddened clay was absent from this burial.

Burial No. 13, adolescent extended on the back.

Burial No. 14, closely flexed face down, the knees to the left.

Burial No. 15, closely flexed, face down.

Burial No. 16, an aboriginal disturbance having near it a flint knife with both ends missing, the remainder being 8 inches in length, and an undecorated vessel of coarse ware, badly crushed.

Burial No. 17, a deposit of unburnt bones in no order. Near these was a small pipe of claystone (Fig. 72), a carbonized coating of material in the bowl giving evidence of former use.

Burial No. 18, closely flexed on the left.

Burial No. 19, a disturbance.

Burial No. 20, a deposit of unburnt bones or a disturbance, having two skulls, etc. Nearby was a pointed implement of bone.

Burial No. 21, closely flexed on the right.

Burial No. 22, closely flexed on the right. Near the feet was an ornament of charred wood which had been copper-coated, containing, in a hollow space, small pebbles. Mr. Charles C. Willoughby considers ornaments of this class to be imitations of a milkweed pod (*Asclepias*), the stones representing the seeds, and fiber the fleecy material present in the pod (see page 263). In this instance no fiber was found, possibly through its having been consumed.

Burial No. 23, a skull and bones in disorder, unburnt.

Burial No. 24, somewhat similar to No. 23.

Burials Nos. 25 and 26, closely flexed on the right.

Burial No. 27, similar to Burials Nos. 23 and 24.

Burial No. 28, closely flexed on the right.

Burial No. 29, a child having four bone beads at the neck.

Burial No. 30, closely flexed on the left, having at the head a hatchet of indurated shale, 6.3 inches in length.

Burial No. 31, closely flexed on the left.

Burial No. 32, a stone grave, rude but nevertheless of the box-shaped variety, the covering slabs, which had fallen in from one side and consequently slanted downward considerably, being 4 feet below the surface. The depth to the bottom of the grave, which was a fireplace and hard, without slabs, was 5 feet. The slabs, of limestone, were two on the right side, three at the left; and the covering slabs, which were two in number, and in addition a fragment on the lower part of the grave. At the head was a single slab, but none was present at the foot of the grave, for a cause that later will be apparent. Outside measurement, the grave was 3 feet 10 inches in length and about 2 feet in width. This grave is shown in Fig. 73, the water which collected around it being apparent in the illustration.



FIG. 72.—Pipe of claystone. With Burial No. 17. Bennett Place, Tenn. (Full size.)



FIG. 73.—Burial No. 32. Rude stone box-grave, 3 feet 10 inches, by 2 feet, which contained the skeleton of a child. The depth at which the grave was in the mound caused water to collect, which is seen in the illustration. Bennett Place, Tenn.



2



1

1 AND 2. MOUND ON THE BENNETT PLACE, VESSELS OF EARTHENWARE. (FULL SIZE)

Within the grave was the unburnt skeleton of a child 8 or 9 years of age, extended on the back, the right arm and forearm being alongside the body, the left forearm across the trunk.

Between the top of the skull and the slab at the head of the grave was a space 9.5 inches in length in which was a bowl about 6.8 inches in diameter, resting upright on a rude undecorated pot. In the bowl was a spoon carved from a musselshell, which rested on another. In the spoon were four barrel-shaped beads of shell, each about .5 inch in length. The space to be occupied by the vessel presumably had not been taken into account when the grave was constructed, consequently the legs of the skeleton projected beyond the foot of the grave; hence the absence of the foot-stone.

This bowl, shown in Plate VIII, Fig. 1, is of special interest in that it has had a striking design painted in red on a background of yellow slip, the nature of the design differing entirely from anything found or heard of by us along Tennessee river except between the Bennett Place and Citico creek, about thirty miles farther up, where fragments of vessels of this kind were found, as was also the case at the White Place, an intermediate point. We have been unable to learn, though the foremost authorities have been consulted, that designs of the kind on this vessel and on the other bowl from this mound have been discovered elsewhere in the State of Tennessee. Evidently vessels of this kind belonged to a culture local and restricted in area. The designs shown in the illustration appear three times on the vessel. The white evident on the vessel in places is not, we think, due to color applied by the aborigines, but possibly resulted from exposure to heat, though not at the time of the fire ceremony in this mound.

Burial No. 33, closely flexed on the right, having below it a bone implement badly burnt.

Burial No. 34, closely flexed on the left.

Burial No. 35, partly flexed to the right, having a flint knife, pointed, 7.25 inches in length.

Burial No. 36, partly flexed to the left.

Burial No. 37, extended on the back.

Burial No. 38, partly flexed to the left.

Burial No. 39, partly flexed to the right. The upper part of this skeleton was burnt, the extremities projecting beyond the clay. At the outer side of the knees was a hatchet of silicious material, 4.25 inches in length. Lying transversely on charred matting, under the right humerus, just above the elbow, the edge away from the body, was a celt of indurated shale, 5.75 inches in length. A small, undecorated vessel in fragments was on the upper part of the thorax. At the right side of the neck was a pin of bone having a blunt point, a hair-pin, perhaps, under an implement of indurated shale, 4.5 inches long, having a blunt edge. At the neck of the burial were a few discoidal shell beads.

Burials Nos. 40 and 41, partly flexed on the right.

Burial No. 42, adolescent, partly flexed on the left.

Burial No. 43, partly flexed to the right, the right humerus almost at a right angle from the trunk, the forearm closely flexed on it; the left humerus along the thorax, the forearm diagonally upward and across the trunk.

Burial No. 44, extended on the back, the upper arms along the body, the right forearm diagonally across the trunk, the left straight down. At the neck were shell beads.

Burial No. 45, at full length, face down, a post-hole having removed the skull, the legs cut through by a trench from an upper layer in the mound. The upper arms were parallel to the trunk, the right forearm flexed upward across and under the thorax, the left closely flexed against the humerus.

Burial No. 46, partly flexed on the left.

Burial No. 47, trunk face down, the legs partly flexed to the left, the right humerus extending almost at a right angle to the body, the forearm flexed to an acute angle with the upper arm, the left humerus and forearm being similarly disposed.

Burial No. 48, disturbed bones of an adolescent. Shell beads and two small, flint arrowpoints were near the skull.

Burial No. 49, a mass of disarticulated bones together, having four skulls, other scattered bones being nearby. Having been placed in a space between two deposits of red clay over burials, none of these bones showed marks of fire. Over part of this deposit of unburnt bones were grouped four masses of unburnt limestone, the largest 7.5 inches by 6.5 inches.

Burial No. 50, partly flexed on the left. At the thorax were two pebbles; shell beads were at the neck.

Burial No. 51, the upper part of the trunk face down, the legs partly flexed to the right, the right humerus parallel to the trunk, the forearm closely flexed against it, the left humerus at an angle of forty-five degrees from the body, the forearm flexed under the trunk. At the right elbow was a small shell disc, imperforate. At the neck were many shell beads and remains of a long mussel-shell which may have been a kind of pendant.

Burial No. 52, closely flexed on the left. In the space between the thighs and the body was a celt of indurated shale, 7.1 inches in length. The handle of this celt was in place, but was so badly charred that it fell to fragments on removal. This burial lay, in part at least, on a kind of mat made of reeds or of small canes placed parallel in contact and joined together with cords crossing at right angles.

Burial No. 53, closely flexed to the left.

Burial No. 54, partly flexed on the right, both humeri somewhat extended in front of the trunk, with the forearms partly flexed on them. At the neck were shell beads, near which were three arrowheads. All the projectile points from this mound are of medium size or small, triangular, and delicately made.

Burial No. 55, closely flexed on the right.

Burials Nos. 56, 57, 58, all disturbances, having been put in disorder, to

some extent, by an aboriginal trench. At the neck of Burial No. 56 were shell beads. Burial No. 57 had, at the neck, a hatchet of indurated shale, 6.1 inches long, having a handle badly charred which extended under the upper part of the thorax.

Burial No. 59, extended on the back. Resting on the pelvis was a vessel of coarse ware having a rude head, in fragments, which has been restored and proves to be a bottle of about the same kind as that found with Burial No. 77, this mound, shown in Fig. 76. The bottle from this burial has been sent to the United States National Museum (Accession 58442).

Burial No. 60, a disturbance.

Burial No. 61, extended on the back. Under this burial had been a mat such as has been described in connection with other burials in the mound.

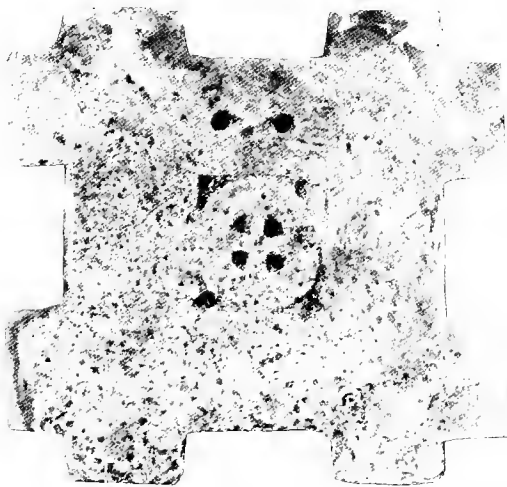


FIG. 74.—Gorget of shell. With Burial No. 75. Bennett Place, Tenn. (About full size.)

Burials Nos. 62 and 63, children, the small skeletons considerably burnt.

Burial No. 64, partly flexed on the left.

Burial No. 65, partly flexed on the left. On the chest had been an ornament of sheet-copper reduced to small fragments when found.

Burial No. 66, partly flexed on the right, the humeri along the body, the forearms flexed against them. At the neck were shell beads; under the skull was a handsome knife of flint, more than 9.5 inches in length, having a fine point at one end, neatly rounded at the other.

Burials Nos. 67 and 68, partly flexed on the right, Burial No. 68 having shell beads at the neck.

Burial No. 69, partly flexed to the right.

Burial No. 70, partly flexed on the right.

Burial No. 71, closely flexed on the right.

Burial No. 72, partly flexed on the left.

Burial No. 73, extended on the back.

Burial No. 74, at full length, face down.

Burial No. 75, the skeleton of a child about two years of age, lay in a grave, showing no mark of fire. At the neck were five globular beads of shell to which had been attached a shell gorget of unusual shape (Fig. 74). Shell beads also were at the ankles, making 103 in all for this burial. At the feet was a painted bowl about 5.5 inches in diameter (Plate VIII, Fig. 2) of the fine ware noted in

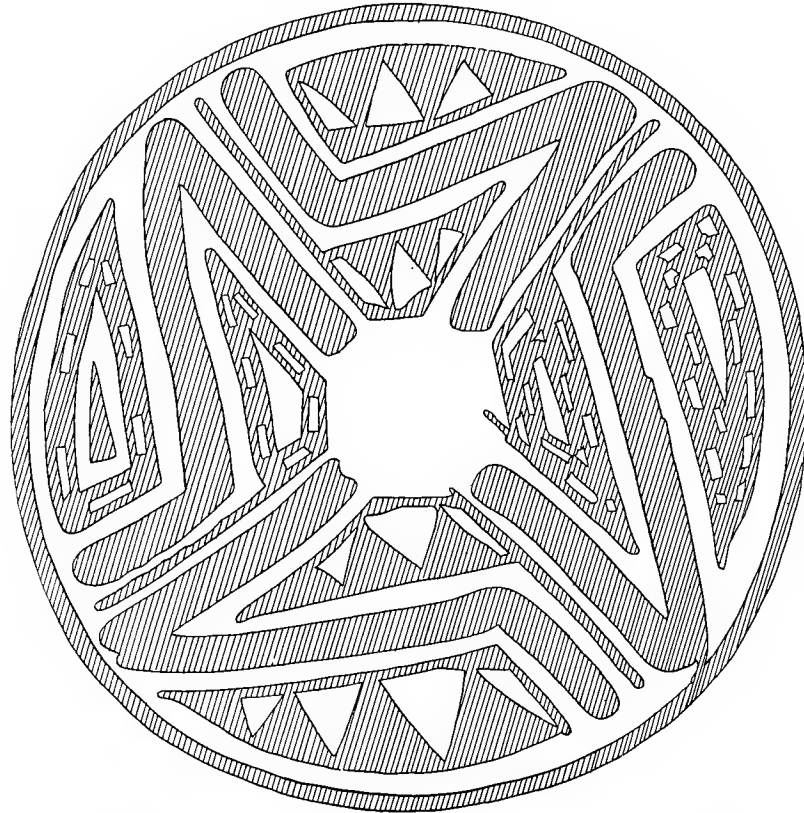


FIG. 75.—Design of decoration on vessel with Burial No 75. (Half-size.)

connection with the bowl from the stone grave in this mound. This bowl, standing upright, had upon it a pot of the usual coarse ware, having two loop-handles and containing a carved spoon of shell.

The design on the bowl, part of which suggests the swastika, is shown in diagram (Fig. 75), the painted portions represented by cross-hatch lines. This design is in part similar to one on a bowl from New Mexico, described by Doctor Fewkes,¹ and incidentally we would call attention to a dancing female figure on a vessel described in the same work² which greatly resembles one on a bowl found

¹ J. Walter Fewkes, "Archæology of the Lower Mimbres Valley," Smithsonian Misc. Coll., Vol. LXIII, No. 10, Fig. 31.

² Plate I, No. 2.

by us in the Rose Mound¹ on St. Francis River, Ark. The shade of the pigment on this bowl from the Bennett mound differs from that usually found on aboriginal ware decorated in red, being richer and resembling closely the color of the material found by us with certain burials along Red river, in Arkansas, that proved to be red oxide of iron which had been subjected to heat.

Burial No. 76, partly flexed to the left.



FIG. 76.—Vessel of earthenware. With Burial No. 77. Bennett Place, Tenn. (Height 13.75 inches.)

Burial No. 77, closely flexed on the right. At the head was a bottle in many fragments which have been put together (Fig. 76), the head probably representing that of some animal or perhaps a human head. An attempt has been made to indicate the ears. At the neck were a few shell beads.

Burial No. 78, closely flexed on the left. About one foot from this burial lay a beautiful ceremonial axe of indurated shale, 8.9 inches in length, width of blade 2.9 inches, width of opposite end 1.1 inch, flaring at the cutting edge as

¹ "Antiquities of the St. Francis River," etc., Journ. Acad. Nat. Sci. Phila., Vol. XIV, Plate XII.

do many copper axes (Fig. 77). Axes of this kind in stone are uncommon, but are occasionally met. This one, however, is figured on a much larger scale than has been accorded before to this class of axes. With the axe were three arrowheads of flint.

Burial No. 79, partly flexed on the right. This burial had but a thin deposit of reddened clay above it, and in consequence was inconsiderably burnt.

Burial No. 80, extended on the back.



FIG. 77.—Ceremonial axe. With Burial No. 78. Bennett Place, Tenn. (Full size.)

Burial No. 81, partly flexed to the right. This skeleton lay beyond the red-clay deposit and was unburnt.

Burial No. 82, extended on the back.

Burial No. 83, at full length, face down. Shell beads were at the pelvis. A remarkable feature in connection with this burial was that the brain, much reduced in size but retaining its shape, was found in place in the skull, which lay in fragments.

This interesting specimen was given by us to the Army Medical Museum, Washington, D. C. A letter expressing our willingness to publish a communication in regard to it remains unacknowledged.

Burials Nos. 84 and 85, children, the latter skeleton having a large mussel-shell at the head, burnt and broken.

Burial No. 86, a skull and a femur, unburnt, lying beneath a mass of sandstone.

Burial No. 87, extended on the back, the arms folded on the chest, the legs crossed near the ankles. This skeleton lay on the red deposit and showed no mark of fire. At the neck were 166 pearls pierced for use as beads. Shell beads

were at the thorax and at the knees. Three vessels of coarse ware, undecorated, crushed, had been in line parallel to the right thigh.

Burial No. 88, adolescent, extended on the back. At the left thigh were a celt of indurated shale, 3.7 inches long, with double cutting edge, and a coarse, undecorated vessel badly crushed.

Burial No. 89, partly flexed to the left. Under the knees was a coarse, undecorated bowl, and a vessel, also of inferior ware, filled with carbonized organic matter. Near the skull was a small, earthenware pipe (Fig. 78) which was somewhat broken by a blow from a trowel but has since been restored. Near this burial was an object of wood which had been copper-coated.

Burial No. 90. Rising water on the last day of our investigation prevented determination as to the form of this burial.

Burial No. 91, adolescent, slightly flexed to the left. *Olivella* shells, pierced for suspension, lay with this burial.

Burial No. 92, disturbance.

Found apart from bones or near scattered ones were three celts of moderate size, found separately, a discoidal of quartz (not bicave), 4 inches in diameter; a ceremonial axe of the hoe-shaped variety, of indurated shale, 5.8 inches long; and two small knives of flint. The ceremonial axe and the knives lay together, just below the surface, entirely away from burials and probably constituted a cache. Holmes,¹ speaking of these hoe-shaped axes, says: 'A suggestion of cultural connection with South America is found in the frequent occurrence in this [Florida] and other Gulf states of a perforated hoe-shaped stone implement which corresponds closely with a type of ax prevalent in South America. It is believed to have had only a ceremonial use north of the Gulf.'

Other objects found were: most of a small, shell gorget having excisions to form a cross of the cardinal directions; two large musselshells, each to receive a handle, fitting them for use as hoes; an imperforate disk of shell 1.5 inch in diameter; a rude, undecorated vessel of earthenware; part of a coarse vessel having had an animal's head as decoration; the penis-bone of a raccoon, the end sharpened for use as an implement; jaw of a black bear.

MOUND B.

Mound B, a few yards NNE. from Mound A, had an area of about 50 feet square. Its maximum height above the water was about one foot, and holes a greater depth than that became quickly filled.

¹ William H. Holmes, "Areas of American Culture Characterization Tentatively Outlined as an Aid in the Study of American Antiquities," *American Anthropologist*, July-Sept., 1914, p. 423.



FIG. 78.—Pipe of earthenware. With Burial No. 89. Bennett Place, Tenn. (About full size.)

MOUND C.

A short distance N. by W. from Mound A was Mound C, on a very irregular area of about 5,400 square yards. The mound, having a circular base, was 5 feet in height and had a diameter of 50 feet. An excavation 12 feet square was sunk until water was reached, passing through dark soil containing organic matter but having no trace of burials. The base of the excavation was carefully prodded for stone graves, but without success.

A short distance NNE. from mound A is an area above water, somewhat greater in extent than is that upon which was Mound C. The area in question, which had a barn upon it before the construction of the dam, had no elevation which was distinctly a mound. At its highest part, however, several feet above water-level, trial-holes showed no sign of aboriginal occupancy and soon reached undisturbed subsoil.

MOUND AND DWELLING-SITE ON THE WHITE PLACE, MARION COUNTY.

In full view from the river, on property of Mr. Taylor White, resident upon it, was a mound 7 feet 4 inches in height and 52 feet by 35 feet in diameter of base, which was said never to have been dug into or plowed over. The dwelling-site lies between the mound and the river.

The mound, which would have been a symmetrical, blunt cone had not the marginal parts on two opposite sides been plowed away, was dug by us to the extent of an excavation 14 feet square, sunk centrally and including a considerable portion of the slope as well as all the summit, there having been practically no level space on the top.

What was seemingly a base was reached at a depth between 6.5 and 7 feet, the clay at that level having been of a lighter shade than was that of which the mound was composed. Masses of sandstone, some about double the size of a human head, others of greater or less dimensions, were scattered here and there in the mound with no arrangement.

About 9 inches from the summit was a human skull in fragments, much decayed.

Four feet below the top of the mound, approximately, but somewhat less from the sloping surface under which this burial lay, were traces of human remains, indicating a burial partly flexed, the knees to the right. This burial was represented by traces of a skull, then a space where ribs, vertebræ, and arms had been, and then traces of femora and tibiæ.

In a grave 4 feet 7 inches by 1 foot 10 inches, extending about 1 foot below the base of the mound and very clearly defined in the light-yellow clay, was a skeleton at a total depth of about 8 feet, considerably decayed and fragmentary, but in much better condition than was the one above it in the mound, lying closely flexed to the right, the head directed SSW. Both humeri were parallel to the body, the right forearm flexed closely against the upper arm, the left forearm across the body. This burial lay at the end of our excavation.

About central as to the base and extending 1 foot 4 inches into the yellow clay below it, was a grave in the form of a wide ellipse, 6 feet by 4 feet, approximately, containing a much-decayed skeleton partly flexed to the left, the head NNE., the whole burial being indicated simply by small fragments. The



FIG. 79.—Grave in the center of the base of the mound, 6 feet by 4 feet, having an arrangement of stones placed over a skeleton, the crushed skull of which is visible in the illustration. White Place, Tenn.

skeleton had been placed immediately on the base of the grave, and directly on the skeleton and around it had been arranged irregularly twenty-six blocks of sandstone as shown in Fig. 79, a space, however, having been left uncovered

over and around the skull, which was in fragments when found, as shown in the illustration. No artifacts of any kind lay with this burial.

The dwelling-site, of limited extent, but which perhaps had been in part submerged when the dam caused the rise in the river at this place, was of sandy loam and was known in the vicinity as a place where bones had been exposed by plowing.

Fifty-one trial-holes, however, showed that burials were widely apart in it, only four being found, as follows: one partly flexed to the right, which had been

somewhat disturbed by cultivation; another ly-

ing with the trunk face down, the lower extremities closely flexed to the right, the upper arms parallel to the trunk, having the forearms flexed against them, this burial being in a pit 15 inches below undisturbed ground which, at that spot, was 32 inches deep; a third burial, 27 inches down, being a skull and thoracic parts with the upper-arms, the rest of the skeleton having been cut away by a pit which contained no burial; and, lastly, a skeleton closely flexed on the right, the head ESE., 3.5 feet deep, the last 18 inches of which being the depth of a grave extending into the sand underlying the field.

Several arrowheads or knives, of flint, were found in the soil apart from burials, as was an interesting object of claystone, shown in Fig. 80, having a part missing when discovered, which has since been restored, none of this part, however, showing in the illustration.

WILLIAMS ISLAND, HAMILTON COUNTY.

Williams Island, which belongs to Mr. Walter Hampton, of North Chattanooga, to whom we are indebted for permission to investigate a number of interesting sites on Tennessee river, is about five miles by water below Chattanooga.

The island, which has a history, both local and otherwise, of aboriginal relics discovered there, is about two miles in length and one-half mile in maximum width.

Its principal aboriginal site is about half-way down the island, on the eastern side, bordering the water, and is a small field of rich, dark soil having some aboriginal debris scattered over the surface. In this field, near the water's edge, was a slight elevation in which, we were told, the principal digging had been done by those who had visited Williams Island in search of relics.

Eight trial-holes were sunk by us in this elevation to underlying, undisturbed, yellow, sandy soil, which was reached at a depth of from 2 to 3 feet without

encountering other than fragmentary human remains, save in one instance (Burial No. 1) where a grave continued into the subsoil, containing a skeleton partly flexed to the right, the head S., at a depth of 5 feet 2 inches. Near the skull was a rude flint knife.

Another low rise a short distance in a southerly direction from the first, and ground adjoining buildings near the rise, contained ten burials, full details as to which we give, not because anything of marked interest was found with them, but for the reason that Williams Island is so famous a spot for the discovery of aboriginal remains.

Burial No. 2, the trunk prone, the legs partly flexed to the right, the humeri parallel to the body, the right forearm flexed against the upper arm, the left forearm in line with the upper arm, the head N. by E., depth 34 inches.

Burial No. 3, extended on the back, the head directed N. by E., depth 22 inches. At the outer side of the left thigh were two small knives, one a chipped pebble, the other a flake of flint; a shell ear-plug; a small shell disc; a few beads made by perforating marine shells (*Marginella apicina*); two bone beads; two small, tubular beads of copper—a strange collection strangely placed unless we consider them to have lain together in a bag.

Burial No. 4, aboriginal disturbance.

Burial No. 5, aboriginal disturbance including three skulls.

Burial No. 6, a child, 20 inches down.

Burial No. 7, adolescent, extended on the back, the head W., lay at a depth of 2 feet, in a grave. Above the skeleton and for some distance up in the grave were materials from a fireplace, including clay colored red by heat, ashes, and charcoal. In places burning wood had been in direct contact with the skeleton, as the face, the front of the thorax, and the front of the right knee, on all of which lay charcoal, were charred, while the under part showed no mark of fire.

Burial No. 8, adolescent, extended on the back, the head W., depth 18 inches.

Burial No. 9, at full length on the back, the head N., depth 32 inches.

Burial No. 10, a child lying at full length on the back, the head S., 22 inches down. A pot having two loop handles, and small, coarse, lined decoration below the rim, lay at the left of the skull.

Burial No. 11, extended on the back, the head directed toward S., depth 3 feet. Between the shin-bones was a small, cutting implement of chipped flint, and a similar one lay at the left of the skull. Seventy-two shell beads were at the neck.

In the soil, apart from human remains, were a considerable number of pottery disks, found separately. One of sandstone has incised on one side a cross and on the other side a small central depression with six about equidistant lines radiating from it.

There were also found in the dark earth a number of flint arrowheads, gracefully made, some small but not more so than are present in many aboriginal sites along Tennessee river; a large part of a bowl having knobs around the margin; a leaf-shaped implement of flint, 3 inches in length; jaw of a black bear.

Here ends the description of the sites into which, it is believed, relic-hunters have dug before, the remaining two sites having been, we are confident, undisturbed before our visit.

About one-quarter mile above the lower end of the island is a restricted area of dark soil having fragments of shell and bits of flint on the surface. No rise was apparent.

Thirteen trial-holes came upon two burials, as follows:

Burial No. 12, closely flexed on the right, the head NNE., depth 9 inches.

Burial No. 13, partly flexed to the left, the upper arms parallel to the trunk, the right forearm across the body, the left forearm flexed against the humerus.

Bordering the water's edge, on the eastern side of the island and one-half mile, approximately, from the upper end of it, is an aboriginal dwelling-site of considerable extent, as evidenced by the character of the soil and the presence on the surface of fragments of shell, of stone, and of pottery to a limited extent, one bit of the latter bearing a design conferred with a stamp.

Considerable digging in this place, where no rise was apparent above the general level, yielded two burials:

Burial No. 14, closely flexed on the right, the head SW., lay in a grave more than 4 feet deep.

Burial No. 15, 3 feet down, partly flexed to the right, the upper arms along the body, the right forearm closely flexed on the humerus, the left forearm in line with the upper arm. The skull, which was directed W. by N., was saved in excellent condition. A piercing implement of bone lay at the inner side of the left elbow. This burial was in material similar to the surrounding soil. No limits to the grave could be determined.

Here ended our investigation of Williams Island, as no other aboriginal sites were apparent. It would not have surprised us to have found no burials on this island, considering the cultivation and the amount of digging that is said to have taken place there, but to find so few and comparatively uninteresting objects interred with the dead at this well-known place was entirely unexpected.

We may not leave Williams Island without reference to the minute arrow-points alleged to have been found there and along Moccasin Bend, nearby.

These minute points, some hardly more than one-sixteenth inch in length, are well known to archæologists. They have been described by Professor Moorehead¹ who, however, never having visited the locality, of course had to rely on statements made to him. Professor Moorehead says:

"One of the strangest things in Middle South archæology is the high art exhibited in the exceedingly small points found at Moccasin Bend, Tennessee river. . . .

"Col. Young [Col. Bennett H. Young, of Louisville, Ky.] has the largest

¹ "Prehistoric Implements," p. 168 *et seq.*

collection of these small Tennessee arrow-points in this country. Not more than 500 have been found, and he has in his cabinet a collection of 350. They have attracted attention and created much interest wherever exhibited and for a long time many people were disposed to believe they were counterfeit productions of the present time. In order to satisfy himself of the absolute authenticity and genuineness of these arrow-points, Col. Young, on two occasions visited the place where they were found. He crawled on his hands and knees over the sand, sifting it, and after three days' hard work secured two very fine specimens and found hundreds of broken pieces, showing that these arrowheads were made at Moccasin Point [Bend] in large numbers. The spawls from the agate and flint are still found in large quantities; but whatever race made them had evidently attained the highest possible skill and perfection in the manufacture of arrowheads and obtained a knowledge which had not been communicated to other tribes, for in the same locality, within a hundred miles of this point, no similar articles have ever been found."

Descriptive of the illustrations of some minute arrowpoints and other small points of remarkable appearance, Professor Moorehead quotes Colonel Young's letters as follows:

"The most unusual of the objects on this card is the flint fish-hook, which has a well defined barb. The small drills at the top of the plate and one at the bottom are very unusual, some have square, some have rounded heads. All of these came from Williams Island in the Tennessee river, at Moccasin Bend. They are not only of splendid material—many of them being of agate—but the points are very sharp, the serration is regular and even, and the shoulders to the points are not only very much prolonged but the points are fine as a needle. These were evidently made in modern times. It is impossible to conceive of such serrations on arrowheads of such small size without the use of metal implements of some kind, either for the purpose of sawing the material from which these points were made or for the purpose of cutting them."

Colonel Young courteously replied to inquiries from our Academy in relation to his connection with the minute arrowpoints, stating, among other things:

"I secured nearly all these small arrowpoints. I first got them from a dealer in Cincinnati—long since dead—who had a sort of trust with the person who found them in Moccasin Bend. These points were so remarkable that their genuineness was questioned, and some ten or twelve years ago I went to Chattanooga and stayed three days. I got numerous perfect ones. The way I secured them was to take the sand which washes down from the first and second dams of the Tennessee river and at the deposit where there would be a pool of water caused by the flow from the first and second dams we would sift the sand with a very fine sifter and in this way we got not only the perfect but the imperfect arrowpoints. I must have gotten a thousand broken ones, some fairly good even though not perfect."

The facts as to these minute points (so far as it is advisable to publish them

in the JOURNAL), determined by us after strenuous search on the surface and by digging, and by repeated interviews with persons in Chattanooga informed on the subject, during a visit of six weeks to that city and its vicinity, including Williams Island and Moccasin Bend, and later by correspondence with experts in various parts of the country, are as follows:

1. None of these points was found by us on the surface or in graves. Had the points been made near the river-bank and then some washed to places along the stream, one certainly would expect others to have been carried inland and left on the surface or deposited with burials.

2. No one living on Williams Island or along Moccasin Bend seems to know anything of the presence of these minute points there, either now or in the past; and citizens of Chattanooga, well informed as to the matter, have sought them in vain and know of no proof of their actual discovery, and from various details connected with these arrowpoints are inclined to consider them fraudulent.

3. Years ago these arrowheads were put on the market in great numbers¹ by a citizen of Chattanooga, a dealer in curiosities and in relics purporting to come from the battlefields around Chattanooga, who later obtained a distributing agent for the arrowheads in Cincinnati, to widen the market for them.

4. Colonel Young, of whose good faith in this matter there is no question, when he obtained the minute arrowpoints in place did so under the guidance of this original vendor. Williams Island is but a short distance from Chattanooga.

5. Though the original vendor, it is said, used to state that some of the minute arrowheads had been found on Williams Island by boys, there is no proof of any of these small arrowpoints having come into the possession of anyone except through the original vendor or through those in his company when the alleged discovery was made.

6. In the foregoing statement no consideration has been accorded to the minute arrowpoints on sale until recently or to the present time by a well-known fakir in Virginia and by parties in the western Tennessee and Kentucky region.

MOUNDS ON THE CARTER FARM, HAMILTON COUNTY.

The Carter Farm, opposite Williams Island, belonging to the Chattanooga Estates Company, C. E. James, Esq., President, has three mounds on it all in sight from one another and from the river bank.

MOUND A.

Mound A, the most westerly of the three, is in a cultivated field and evidently has been greatly spread by the plow. Its present height is slightly less than 4 feet; its diameter, 60 feet. Eight trial-holes, which included most of the mound other than the marginal parts, came upon, in one instance, a double burial in the center of the base of the mound, which seemed to have been placed

¹ We know of the present whereabouts of more than six hundred.

on the original surface soil, which was about 6 inches in thickness and rested upon undisturbed yellow clay.

The grave had been filled in for a depth of about one foot with musselshells, having a small admixture of clay. From this depth upward the proportion of shells mingled with the soil became gradually smaller until at the top scattered shells were found only here and there. Elsewhere in the mound no such deposit of shells was encountered, and it was evident they had been brought to place over the burials in this grave. At the bottom of the grave lay the skeleton of an adult partly flexed to the right, probably a male, judging from the size of the long-bones, the skull being badly crushed.

With its skull resting on the thorax of the adult skeleton were the bones of a child lying partly flexed on its left side, its pelvis extending somewhat below that of the other skeletal parts. Beads made from *Olivella* shells were at the neck and waist of the child's skeleton. The left tibia of the adult skeleton lay in its proper position in respect to its femur, with the exception that it was reversed. Probably in conveying the skeleton to the mound the tibia had become detached, and when the bone was replaced by the aborigines (which they did not always take the trouble to do) it had been reversed as described.

MOUND B.

Mound B, the middle mound of the three, has a height of 4.5 feet, measured from the outside. Its diameters are 60 feet and 35 feet. The marginal parts of the mound had been plowed away to some extent on two opposite sides, which accounts, in part at least, for the unequal diameters. Otherwise, the mound showed no sign of former cultivation. Previous diggers, however, had left a hole near the center, but not sufficient in extent to interfere with serious investigation.

An excavation 12 feet square was sunk by us centrally in the mound to its base, or at least to what seemed the base indistinctly marked, which was reached at a depth of 6 feet. The mound was of perfectly dry clay and work in it was carried on with the aid of picks.

Burial No. 1 lay at a depth of 2 feet 2 inches and consisted of the lower extremities of an adult, flexed. There was no sign of previous digging near these bones, and possibly the remainder of the skeleton had decayed away, or, what we consider more likely, the burial had been originally a part of a skeleton only, such as we found occasionally in mounds farther up the river.

Burial No. 2, partly flexed to the right, the head NW., depth 3 feet 10 inches. The bones were badly decayed. About one foot from the left shoulder were two celts of indurated shale, 7 inches and 5.5 inches long, respectively. With these were the remains of a columella of a sea-shell. Over this burial was a deposit of musselshells mixed with the clay of the mound.

Burial No. 3, partly flexed on the left, the head directed ENE., depth 5 feet. Here again a deposit of river shells lay just above the burial. A similar deposit

in another part of the excavation was not visibly associated with skeletal remains, though possibly decay might account for their absence. No other shell deposits were found in the excavation.

Burial No. 4, a pit extending about 1 foot 3 inches below the base of the mound, contained fragments and traces of bones which indicated that the skeleton had been partly flexed on the right, the head pointing SSW.

MOUND C.

This mound was 45 feet distant from Mound B, and, like it, very dry and hard. Its height was 6.5 feet, outside measurement; the diameters were 58 feet by 36 feet. Here, too, the marginal parts had been plowed away on two opposite sides. A trench about 4 feet wide had been carried in by diggers previous to our coming, along the base to about its center.

An excavation 12 feet square sunk by us through the middle of this mound included part of this trench, and at a depth of 7.5 feet came to what seemed to be undisturbed ground in which no fragments of stone or other indication of the presence of aboriginal products were noted. No shell deposit was encountered in any part of the excavation. After reaching the base, a hole about 2 feet square was carried 18 inches deeper without passing through other than seemingly undisturbed ground.

With exception of traces of a skull found at a depth of 5.5 feet, no signs of human remains were met by us in this mound, though it is not unlikely that other burials formerly present in the excavated part had decayed away.

At Carter Farm, which, as we have said, is opposite Williams Island, were a number of places where the surface soil had been washed and furrowed by rain and where quantities of small chips of flint were present. No arrowheads, however, were found, though it would be at a place such as this that the minute points reported discovered in this vicinity might be expected.

MOUND AND DWELLING-SITE AT WILLIAMS ISLAND FERRY, HAMILTON COUNTY.

The landing place of a ferry from the mainland to Williams Island is on property belonging to Mr. Walter Hampton, of North Chattanooga, whose courtesy to the Academy we have had occasion to note in connection with Williams Island.

About one hundred yards easterly from the eastern end of Williams Island Ferry, in a cultivated field, is a mound slightly more than 2 feet in height and about 50 feet in diameter, whose shape has probably been altered by long cultivation.

Eight trial-holes, which covered fairly what had been the original mound, came upon a skeleton (Burial No. 1) lying at full length on the back at a depth of 2 feet, in the base of the mound. Near the left shoulder was an arrowhead of flint.

About 50 yards in a northerly direction from the mound, in the same field,

was a low elevation having considerable debris on the surface. Five skeletons were uncovered as a result of considerable digging.

Burial No. 2, closely flexed on the right, the upper arms parallel to the body, having the forearms closely flexed against them, had two slabs of limestone over the feet. This burial was 8 inches below the surface.

Burial No. 3, adolescent, partly flexed to the left, lay in a grave 18 inches below the surface, one foot of the grave extending into undisturbed yellow clay which afforded a marked contrast to the dark soil with which the grave was filled. Beads made by piercing sea-shells (*Olivella*) were around the waist, along both forearms, at the inner side of the right upper arm, at the front of the upper part of the right side of the thorax, and at the back of the right shoulder-blade, 888 in all. At the right elbow, encircling the forearm, were nine beads from 1.1 inch to 1.6 inch in length, made from columellæ of marine shells.

Burial No. 4, at full length on the back, depth one foot.

Burials Nos. 5 and 6, children lying side by side, one foot down.

DWELLING-SITE AND MOUNDS ON THE HAMPTON PLACE, HAMILTON COUNTY.

On the left-hand side of the river, going up, in sight from the lower part of the city of Chattanooga, on Moccasin Bend, famed for the discovery there of aboriginal remains, is one of the numerous properties so courteously placed by Mr. Walter Hampton, of North Chattanooga, Tenn., at the disposal of the Academy for investigation.

Over much of this estate, in places, lies debris left by aboriginal occupancy, and circumstantial accounts from various sources, of the finding of many relics on the place, superficially and by digging, are current.

Wires carrying power to the city of Chattanooga and beyond from the electrical plant at Hale's Bar dam cross Tennessee river at the lower end of this estate. About two hundred yards ESE. from the last iron structure supporting the wires on the side of the river on which the estate is, we noticed ground slightly higher than was most of the cultivated land surrounding it, and were told by Mr. Haney, the tenant on the lower part of the Hampton Place, that human bones had been dug from this place in the past.

Extensive digging by us in this higher ground strongly indicated that burials in it had been confined to a restricted area of irregular outline, 34 feet long and 19 feet and 25 feet wide at the two ends, respectively.

This burial place was completely dug through by us and proved to be loamy sand extending down about 4 feet to underlying clay. In it were encountered thirty-one burials (excluding several disturbed by previous digging), all in graves or in grave-pits, the graves being such as we had been accustomed to along the river, containing flexed burials and burials at length.

The grave-pits, however, were circular, about 2 feet in diameter, and were deeper than the graves, sometimes extending a foot or more into the underlying

clay. In these grave-pits burials, through lack of space, had been placed more or less vertically, as will be described in due course.

Nearly every burial in this cemetery, but not all, had been interred in connection with the use of ceremonial fire, the graves and pits having been first filled and then above there had been placed an extensive layer of clay, greater in extent than the area of the grave. This clay, red from the effect of fire, probably had been placed above the graves while hot.¹ In several instances imprints of matting, etc., were found on these masses of clay, which imprints probably denote that a wigwam had been burnt ceremonially.

That this red clay did not come from fireplaces made directly over the graves is clearly proved by the fact that the material of this site was of loamy sand, as

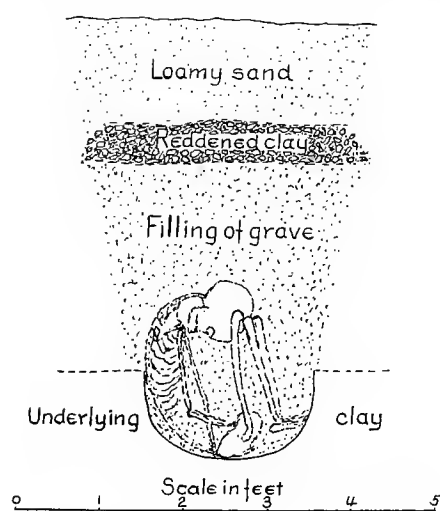


FIG. 81.—A typical burial. Hampton Place, Tenn.

stated, and could not have burnt into lumps such as were found, through the effect of any degree of heat. Evidently the burnt clay had been brought and deposited. Furthermore, no ashes or charcoal were with the layers of clay, nor was the sand below them affected by heat to any marked extent. Clay for wattle-and-daub buildings, which presumably had been burnt ceremonially at the time of these burials, could, however, easily have been obtained from the underlying clay or from rolling ground not more than one hundred yards distant.

These layers of reddened clay, however, were not on the present surface of the ground, but at some depth beneath it. Presumably, after the burials had been made and the cere-

monial rites performed at this place, the occupancy of the site continued with a consequent increase in its height.

A typical example of the grave-pits, but by no means applying exactly to all of them, as they varied considerably in detail, is as follows (see section, Fig. 81):

Loamy sand on top, 14 inches.

Reddened clay, 6 inches.

Material filling that part of the grave-pit in the made-ground, 30 inches.

The same material continuing into underlying clay, 12 inches.

Depth from surface, 5 feet 2 inches.

Here follow details of the burials:

Burial No. 1, partly flexed on the right, 46 inches to the upper surface of the bones. A flint knife or arrowhead lay in the soil nearby.

¹ See our account of the Bennett Place, pages 338-352 of this report.

Burial No. 2, partly flexed to the left, depth 49 inches. A pot of coarse ware with rude decoration of elementary design lay near the skull.

Burial No. 3, depth 4 feet, lay at length, face down as far as the knees, the legs being closely flexed against the thighs, the forearms and arms parallel to the body.

Burial No. 4, a skeleton in a grave-pit 52 inches deep, closely flexed, the pelvis at the bottom of the pit, the body bent above it so that the head lay over and upon the pelvis. The thighs were in an almost vertical position, the legs flexed against them. The skull of this skeleton was saved.

Burial No. 5, a skeleton partly flexed to the left, there being a depth of 43 inches to the upper surface of the bones, our method of measuring such burials. The right arm and forearm were parallel to the trunk; the left humerus was against the side of the body, the forearm flexed on it. At the neck were three tubular, brass beads, much corroded, and a disc of brass (the reader will note we are describing a post-Columbia site) slightly more than 3 inches in diameter, having a central opening .8 inch across.

Burial No. 6 lay in a grave 40 inches down, the trunk on the back, the thighs vertical, at right angles to the body, the legs flexed against them. The humeri were parallel to the trunk, the forearms lying across it. Near the chin lay an iron celt 2.5 inches in length. Alongside the skull was a layer of powdered hematite, about 8 inches in diameter and 1 inch in maximum thickness, in which lay a tubular bead of brass. On the upper part of the thorax was a boss of sheet-copper about 4 inches in diameter, having a small central perforation, which evidently had been suspended by many strung glass beads which, including two tubular beads of brass, each about 1 inch in length, were at the neck. Glass beads also were at the left elbow. An arrowhead or knife lay near the right wrist, and two deposits of arrowpoints of flint, three in one deposit, two in the other, were near the pelvis. None of these points was less than an inch in length.

Burial No. 7, a child, 53 inches down.

Burial No. 8, a partial burial consisting of a skull without the lower jaw, a femur and a tibia, together, under unbroken layers.

Burial No. 9, a skeleton which Burial No. 6 had cut through, leaving bones from the pelvis up only. With this burial was a deposit of powdered hematite 11 inches by 8 inches, and 1 inch in maximum thickness, with which was a tubular bead of sheet-brass. At the side of the skull were two discs of brass, placed vertically together, while two others of the same material lay horizontally beneath the chin. Near the skull was a tubular bead of bone 1.7 inch in length, and behind the skull the remains of a large marine shell (*Cassis tuberosa*), the interior of which had been removed to form a cup.

The discs, one pair about 4.25 inches in diameter, the other pair slightly larger, all had central openings ranging between 1 inch and 1.5 inch in diameter, one of the larger discs having in addition four small perforations in a row. The skull of this skeleton was saved.

Burial No. 10, an aboriginal disturbance having part of the skull and of one shoulder cut away by the grave of Burial No. 11. This burial (No. 10) had been loosely flexed in a semireclining position. Near the head, together, were two pipes, one of claystone (Fig. 82), the other of limestone, both of an interesting and unusual form seemingly popular at this place, three of this kind having been found here. The shape, very novel, may be a highly conventionalized bird-head or animal form. An iron knife lay on the thorax and a flint arrowpoint was near the left thigh.

At some little distance from the remains, though probably placed in connection with them, was a grooved hammer of flint.



FIG. 82.—Pipe of claystone. With Burial No. 10. Hampton Place, Tenn. (About full size.)



FIG. 83.—Pipe of earthenware. With Burial No. 12. Hampton Place, Tenn. (About full size.)

Burial No. 11, at the bottom of a grave-pit slightly less than 5 feet deep, was a skeleton closely flexed in a vertical position, the knees in front of the chin, the arms along the trunk, the forearms brought forward to the outer side of the legs. Near the right elbow was a deposit of red hematite in powder, about 6 inches in diameter and 2 inches in maximum thickness, approximately. Partly around each humerus was an armlet of sheet-brass about 3.5 inches in width. These armlets had not entirely enclosed the arms, the extremities being about 1.5 inch apart and having each two holes to accommodate a cord or sinew. Around each wrist were bracelets of iron, two in one instance, three in the other. These bracelets, which are badly corroded, are open at one place, like the armlets.

Burial No. 12 was at the bottom of a grave-pit, closely flexed and reclining against the side of the pit. Two pipes, one of earthenware (Fig. 83) and a small globular one of limestone, were at the left forearm; a small, flint arrowhead lay in front of the pelvis. A deposit of red pigment was along the left side of the trunk.

Burial No. 13. This skeleton was reclining against the side of the pit, the thighs vertical, the legs bent against them, the skull bending over until it reached

the pelvis behind the thighs. The right humerus was almost horizontally forward, the forearm partly flexed toward it; the left humerus downward and forward, the forearm flexed across the trunk. This grave-pit was 5 feet 8 inches in depth.

Burial No. 14 was reclining, closely flexed, against the side of a grave-pit 4 feet 2 inches in depth, the head bent over between the knees, both humeri along the trunk, the forearms lying across the pelvis.

Burial No. 15, badly disturbed by the pit dug for Burial No. 12. Near the bones lay part of a pipe of claystone, which probably belonged to the midden debris around, the broken surface of the pipe showing age.

Burial No. 16, reclining against the side of the grave, the trunk tilted to one side, the thighs upward and widely separated, the legs closely flexed on them, the skull bent over against the right leg just below the knee, the right humerus projecting horizontally forward, the forearm partly flexed, the left humerus extending out from the side of the trunk horizontally, the forearm partly flexed on it. Depth of pit, 5 feet.

Burial No. 17, the trunk reclining against the side of the pit and somewhat tilted to the right, the right femur extending upward and outward, the left femur vertical, the legs closely flexed against the thighs, the head crushed down on the pelvis, the right humerus downward along the trunk, the forearm across the pelvis, the left humerus extending laterally at a right angle from the body, the forearm flexed closely on it. In front of the right humerus, in a little heap, were one flint arrowhead and seven small scrapers of like material. Below these, between the skull and the femur, was a knife of iron or of steel, having a projection from the blade, which, perhaps, had been encased in wood to serve as a handle. With the knife were two pebbles and a large flake of flint.

Burial No. 18, partly flexed on the left, 3 feet 10 inches down.

Burial No. 19 lay at length on the back as far as the knees, the legs closely flexed against the thighs, 4 feet 5 inches down.

Burial No. 20, partly flexed on the left, the humeri along the trunk, the forearms closely flexed on them.

Burial No. 21, the trunk leaning against the side of the pit, which was 5 feet 8 inches deep, the thighs widely apart, the legs flexed against them, the skull crushed down between the thighs and resting on the pelvis, the humeri parallel to the trunk, the forearms brought forward across it.

Burial No. 22, closely flexed, reclining against the side of the grave-pit, the knees drawn up nearly to the head, which leaned over somewhat. The arms were down alongside the body, the forearms across it. Depth of pit, 5 feet 6 inches.

Burial No. 23, partly flexed on the left, 4 feet down. A boss of sheet-brass, .6 inch in diameter, having a small, central hole for attachment, was at the left ear, none, however, being present on the opposite side of the head, though part of one was found on the pelvis where presumably it had fallen. Glass beads were at the left forearm.

Burial No. 24, the trunk resting sidewise against the wall of the pit, which was 5 feet 2 inches deep, the head forced down on the pelvis and resting between the thighs, which were flexed obliquely upward, having the legs closely flexed against them. The right humerus slanted downward and outward, the forearm flexed on it and crossing the pelvis; the left humerus extended obliquely down alongside the skull, the forearm partly flexed across the pelvis. A pipe of limestone (Fig. 84) was above the left shoulder, and ten arrowheads of flint, the



FIG. 84.—Pipe of limestone. With Burial No. 24, Hampton Place, Tenn. (Full size.)

smallest of which was 1.1 inch in length, were at the outer side of the left humerus. The skull of this skeleton was saved.

Burial No. 25 had been cut away in part by a grave for another burial. Both humeri, however, were present, and on each was an armlet of brass of the kind already described as having been found at this place.

Burial No. 26, reclining on the side of the pit, which was 4 feet 3 inches deep, the femora about vertical but somewhat separated, the legs flexed on them, the head bent over between the knees, both humeri alongside the body, the forearms crossing to the pelvis. On the chest was a disc of sheet-brass 5.25 inches in diameter, having a small central hole for attachment, and a number of glass beads which probably had been strung on the cord by which the disc had been suspended.

Burial No. 27, partly flexed to the left, the trunk face down, the right humerus slightly forward and under the body, the forearm in line with the humerus, the left upper arm somewhat out from the body, the forearm flexed back under the thorax.

This burial was exceptional, the skeleton lying in a grave 4 feet 3 inches deep, which had been filled in to a depth of 14 inches with the ordinary material from the site, leaving a concave surface. Above this was a layer of charcoal, 7 inches deep, which followed the outline of the sandy loam. Above the charcoal was reddened clay in small masses, having a maximum thickness of 15 inches, which, in its turn, was covered by 14 inches of sandy loam.

Burial No. 28 lay partly flexed to the right, the right humerus along the trunk, the forearm crossing the body at about a right angle, the left upper arm along the thorax, the forearm flexed upward and across the thorax. Three chips, and five flint arrowheads, the smallest 1.05 inch in length, lay at the left of the skull, and at the outer side of the left elbow, in an elongated pile, were 47 fragments nearly all of flint, a few probably of quartzite, the largest



FIG. 85.—Pipe of earthenware. With Burial No. 28. Hampton Place, Tenn. (About full size.)

having the bulk, but not the outline, of a hen's egg; three pebbles; three leaf-shaped implements of flint, the largest 3.75 inches in length; a small flint scraper. On the thorax lay an interesting pipe of earthenware (Fig. 85) having perforated projections on two opposite sides of the bowl, a very rare form, and two discs, one of copper, about 5 inches in diameter, lying immediately above the other, which is of brass and has a diameter of 6.3 inches. Both these discs have central, circular openings, the smaller slightly more than 2 inches across, the larger 3.3 inches in diameter.

Burial No. 29, a child 44 inches down, having glass beads at the neck and wearing a bracelet of sheet-brass rolled to make a roughly-circular cross-section and having the extremities drawn around to bring one somewhat above the other.

Burial No. 30, the trunk lying extended on the right side at the bottom of a pit 5 feet in depth, the right humerus projecting somewhat from the side, the forearm partly flexed on it, the left upper arm along the trunk, the forearm flexed against its upper arm, the right femur diagonally across the pelvis, the tibia closely flexed on the thigh, the left femur vertical, its tibia partly flexed on it.

Burial No. 31, the trunk against the side of the pit, bending forward, the thighs together and vertical, the legs closely flexed on them, the skull bent over back of the femora, on the pelvis, the right humerus down along the aside of the pit, the left humerus diagonally forward and down, both forearms across the pelvis. On the sternum was a disc of sheet-brass 4.5 inches in diameter, having a circular opening in the center somewhat less than 1 inch across. Above the head was a rusty blade of iron or of steel. Burnt clay lay just above this burial, which, however, was not affected by heat. The grave-pit was 5 feet in depth.

In the digging were found, apart from burials, a number of arrowheads and scrapers of flint; a celt of igneous rock, 4.5 inches in length, grooved on its narrower sides to facilitate fastening; a pebble about 3.5 inches long, rudely chipped to form a spearhead; and a jaw probably of a young bison.

The entire property at this place was carefully searched with a view to the discovery of minute arrowpoints and in the hope of finding another cemetery, in both of which efforts, however, we were unsuccessful, though considerable digging was done in various places which evidently had been aboriginal dwelling-sites.

From the surface came: A considerable number of arrowheads and knives of flint, some of the arrowheads being slender and triangular like most found in this region, the smallest one being about .75 inch in length; small scrapers of flint; rude chisels of shale; a pebble notched on two opposite sides, evidently a sinker, found near the river-bank; a stone of considerable size, deeply pitted in three places and showing other somewhat elementary pits; a handsome point of flint, 3.5 inches in length; a small, triangular pendant of sheet-brass, pierced at one end for suspension.

Mr. Earle Haney, son of the tenant on the lower part of the Hampton Place, a pupil at the high school in Chattanooga and much interested in Indian antiquities, informed us he had resided on the place eight years and had found on it quantities of arrowpoints, none of which, however, was less than one-half inch in length, and points of this size were very exceptional.

Following along the bank, upstream, on this property for about one mile, one comes in sight of a mound (Mound A) near a building used for the storage of hay. This mound, 6.5 feet high, measured from the outside, and 42 feet in diameter of its irregularly circular base, evidently had been much dug into previously in the upper part.

A central excavation 12 feet square was put down by us, soon reaching bones scattered by former diggers, and in another place, four slabs of stone near which no bones were found. At a depth of 4.5 feet the upper part of a skeleton was reached, the remainder having been cut away by digging, aboriginal or recent. A dark base-line was reached 6 feet 7 inches down, which had been cut through by a grave 45 inches long by 2 feet wide, extending 10 inches into the undisturbed, underlying soil. In this grave no trace of bone remained, though a small quartz crystal, which doubtless had been with a burial, was found.

In sight from Mound A, did not the building intervene, was a low mound, or the remainder of a mound, which had been under cultivation. Its height at the time of our visit was 18 inches; its diameter, 50 feet. A central excavation 12 feet square was put down by us, about in the middle of which was a skeleton, closely flexed on the left, which evidently had been placed on the original surface of the ground and earth piled over it. At the lower part of the pelvis, not in a pile but scattered along near one another, were twenty-three triangular arrow-heads of flint, having concave bases, some slightly broken, the smallest of which was .75 inch in length.

This mound was on a slope, consequently the outer part of it on one side was of greater depth than were the central parts, and that portion which was higher on the slope. A burial found considerably away from the center and in that part of the mound which descended the slope, was at a depth of 3.5 feet. The mound at this point was 27 inches to the base, and the grave in which this burial lay extended 16 inches into underlying soil, the grave being 4 feet wide by 6 feet 2 inches in length. The skeleton lay at full length on the back, without artifact of any kind.

About 250 yards W. by N. from Mound A was another which probably had been about 3 feet in height, but which was so thoroughly gutted that marginal parts only surrounded an excavation.

Approximately 180 yards NNW. from Mound A was one 3.5 feet in height and 45 feet in diameter, filled with comparatively recent burials in coffins.

In the neighborhood of 315 yards NE. from Mound A, on the summit of a low hill overlooking the river, was a mound 5.5 feet in height and 35 feet in diameter of its circular base. This mound, which culminated almost in a peak, had trees upon it and evidently never had been under cultivation. An excavation 12 feet square reached a distinct, dark, basal line resting on clay and gravel at a depth of 6 feet 3 inches from the summit of the mound. No sign of bone, sherd, or chipped stone was encountered in this mound, and no grave had cut through the base.

DWELLING-SITE ON CHATTANOOGA ISLAND, HAMILTON COUNTY.

Opposite the city of Chattanooga is a small island, the property of Mr. Joseph Willis of Chattanooga, which has some history of burials and artifacts discovered there in the past. A careful examination of the island showed it to have been an aboriginal dwelling-site, but its proximity to a large city presumably had been the cause that but few objects of interest were visible on the surface. No fragments of human bones were to be seen, nor was there any rise of the ground or marked darkening of the soil to indicate the presence of burials.

A number of trial-holes were put down in different parts of the island, one of which came upon a skeleton lying closely flexed to the right, the right forearm flexed back against the humerus, the left forearm diagonally up across the thorax.

The head was directed E. by N. This burial, which was without artifacts, lay at a depth of 28 inches.

On the surface were picked up by our party twelve arrowheads or knives, of flint, all with shoulders or rudimentary shoulders, or with single shoulders (some having been made in this way). These twelve flints ranged in size between somewhat more than 1 inch and about 2 inches. The flint was variously black, pink, white, and shades of brown and gray.

At the Citico site, which next will be described, and which is visible from Chattanooga, quantities of arrowheads were found, almost all of which are triangular, and all, save very few, are of black flint. These facts illustrate how difficult it would be to generalize as to this region.

CITICO¹ MOUND AND SITE, HAMILTON COUNTY.

A short distance above the city of Chattanooga, in view from its water-works and from Tennessee river, is a mound in a large, cultivated field, belonging, at the time of our first visit, to Mr. George W. Gardenhire, of Chattanooga, and when the place was again visited by us, to the Montague estate, represented by Mr. N. Thayer Montague, of Chattanooga. The mound, which takes its name from nearby Citico creek, 15.5 feet in height, has been quadrangular with a flat top, but as every part of its surface has been under cultivation, the corners of the mound are now rounded, though the sides are astonishingly steep considering the plowing and subsequent wash of rain to which they must have been subjected. In basal diameter the mound is 110 feet by 145 feet; the summit-plateau in corresponding directions, 71 feet by 42 feet.

The investigation of the mound described by Mr. M. C. Read in the Smithsonian Report for 1867, tells of a tunnel carried into the mound, of skeletons found below the base, and of the discovery of post-holes, etc.

Probably a structure of some kind had existed and burials had been made beneath it, or it had been erected over burials and the mound had been built around and above the structure.

The mound, however, was domiciliary and not a burial mound, as an excavation 12 feet square sunk by us to a depth of 12 feet from the center of the summit-plateau encountered no interments or signs of interments. Evidence of former

¹ The Citico mound described here, and the creek of that name which is referred to, as we have stated before, must not be confused with others of like name described in the 12th Annual Report of the Bureau of American Ethnology, pp. 373 and 375. The Citico creek there mentioned, near which a Citico mound is, flows into Little Tennessee river and the mound is near the junction in Monroe County, Tenn. Little Tennessee river enters the Tennessee opposite Lenoir City. The Citico mound in Monroe County is referred to by Cyrus Thomas in his "Catalogue of Prehistoric Works," p. 210. For the name Citico (Sítikú') see Mooney in 19th An. Rep. Bur. Am. Ethn., p. 531. The Citico mound near Chattanooga, in Hamilton County, examined by us, is described in the Smithsonian Report for 1867, p. 401 *et seq.*, and is referred to by Cyrus Thomas in 5th An. Rep. Bur. Am. Ethn., p. 77 *et seq.*

digging was found in places, but no trace of skeletal remains was present in the material.¹

Extending ENE. and WSW. from the mound, which is near the western end, is a ridge with flat top, about 250 feet in width and 600 feet in length, and having a height, judging from holes put down from the surface to undisturbed clay, of about 4 feet. On the eastern end of this ridge is an elevation of about 3.5 feet. The ridge is artificial, or mostly so, and has grown up under prolonged occupancy.

Over the surface of the ridge, the elevation, and part of the mound is abundant midden-debris, including shells, considerable pottery, and fragments of flint. The pottery, shell-tempered, is as a rule coarse and undecorated, some of the fragments, however, bearing very elementary, incised designs rudely executed. One sherd, however, of hard, smooth ware and having but little shell-tempering, if any, had an incised decoration of partly interlocked scrolls, fairly well executed. Another bore a design conferred by the aid of a stamp, and a fragment of yellow ware was found bearing part of a design in red paint.

Finished artifacts on the surface were rare, the site evidently having been carefully searched by visitors from town, where there is a ready market for antiquities, and we learned that a former resident of Chattanooga had systematically dug into the ridge for a considerable period in search of artifacts to sell. The elevation at the end of the ridge, however, strangely enough, had remained uninvestigated. Our surface "finds" consisted of one rude celt; a number of arrowheads of flint, nearly all triangular, some slender, some almost equilateral, and nearly all less carefully made than the projectile points taken later from the graves by us; a part of a small pipe of earthenware, having much of the bowl missing and the marginal surfaces carefully smoothed to allow the part of the pipe remaining to serve some purpose; a small, undecorated pipe of soapstone.

On various parts of the ridge and of the elevation at its eastern end were fragments of human bones.

Trial-holes in the elevation which soon reached burials, showed it to be somewhat unlike the ridge, the elevation being composed in part of midden debris, but having also local layers of clay of varying shades to within one foot of its surface, above which was midden deposit. Presumably the elevation had been built on the ridge and then lived upon.

The ridge was carefully dug over by us, and burials were found to be widely scattered in it and to have almost no artifacts with them. Presumably, more important persons had been interred in the elevation, which was constructed for burial purposes exclusively.

In all, one hundred and six burials were discovered, and numerous fragments and scattered bones. Such burials from the elevation as were comparatively

¹ Since our visit, two-thirds of Citico mound has been dug away in making the new River Road. We are informed by a friend in Chattanooga, who was greatly interested in the work, himself a collector, and explorer of mounds, that nothing of interest was found during the removal. Burials and some artifacts were encountered near the base.

The newspapers, of course, made the most of the matter.

deep had been deposited in graves which could be traced almost from the surface down, and no doubt had been made from the surface, but the confusion arising from cultivation of the field made impossible a determination as to the upper few inches of the soil.

The burials, whose heads were directed to various points of the compass, were: of adults, 70; of adolescents, 4; of children and of infants, 32.

The forms of burial were as follows:

Extended on the back, 2.

Closely flexed to the left, 1.

Partly flexed to the right, 17.

Partly flexed to the left, 17.

Partly flexed on the right, 15.

Partly flexed on the left, 6.

Bunched, 1.

Positions to be described in detail, 8.

There were also seven disturbances, recent and aboriginal.

The reader will recall that, when not otherwise stated, burials are those of adults, and that the form of burial of infants and children is not included.

We shall now describe in detail all burials from this place with which any artifact was found, as well as such burials which otherwise may seem worthy of special notice.

Burial No. 2, but a few inches from the surface, partly flexed to the right, the cranium pointing S. by E. At each side of the head was a shell ear-plug made from a conch-shell, and resembling a bracket in shape.¹ At the neck were shell beads rather badly decayed.

Burial No. 3, one foot down, extended on the back and having the right forearm flexed back on the humerus, the hand resting on the shoulder, the head SE. At the outer side of the left forearm was a small, undecorated pot of inferior earthenware.

Burial No. 4, partly flexed on the left, the head S. by E., lay in a pit 2 feet deep, 25 inches wide by 4 feet in length. Under the body, so that both elbows rested upon it, where probably it had slipped, was a mask-like gorget of shell, showing human features. This ornament, which belongs to a well-known class,² is greatly decayed and somewhat broken in one place.

Burial No. 5, a child, 9 inches deep, the skull SE. At each side of the cranium were small, shell ear-plugs of the "bracket" shape.

Burial No. 6, presumably a bunched burial, having three skulls together, the long-bones being somewhat loosely placed.

¹ William H. Holmes, "Art in Shell of the Ancient Americans," 2d An. Rep. Bur. Am. Ethn., p. 216, Fig. 10. Gates P. Thruston, "Antiquities of Tennessee," 2d ed., 1897, p. 315, Fig. 223.

² William H. Holmes, *op. cit.*, p. 293 *et seq.* George Grant MacCurdy in "American Anthropologist," July-Sept., 1913, p. 395 *et seq.* C. B. Moore, "Antiquities of the St. Francis, White and Black Rivers," pp. 287, 321, Figs. 16, 45; and "Some Aboriginal Sites on Mississippi River," pp. 412, 415, Journ. Acad. Nat. Sci. Phila., Vol. XIV.

Burial No. 7, the scattered bones of a disturbance, presumably including two skulls, at a general depth of 16 inches. Somewhat apart from the bones, though no doubt originally with them, was an implement of gray flint, somewhat more than 6 inches in length (Fig. 86). One of similar shape, but smaller, was found

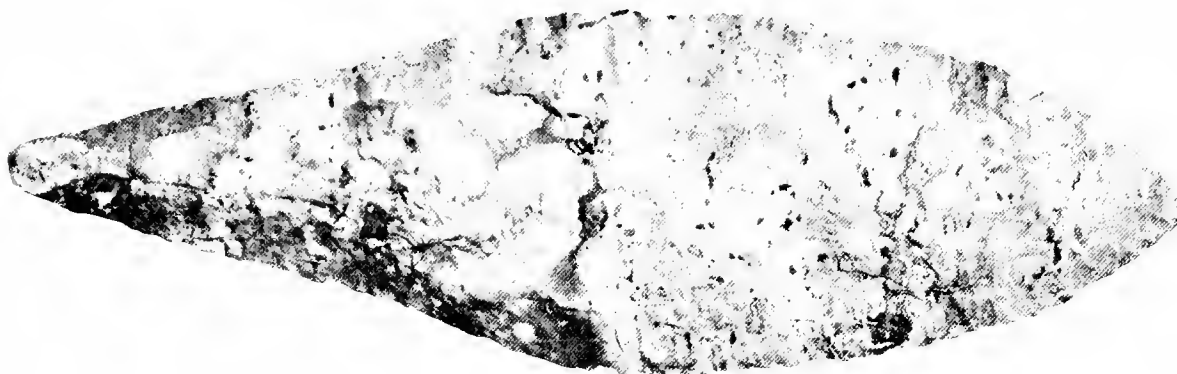


FIG. 86.—Blade of flint. With Burial No. 7. Citico, Tenn. (Full size.)

by us in the aboriginal cemetery on the Bradley Place,¹ Crittenden County, Ark. We have not been able to find other illustrations of implements exactly like this one in publications relating to aboriginal work in stone. Dr. H. M. Whelpley of St. Louis, however, whose collection is so well known, tells us the specimen is not uncommon and that in his collection are a number similar in type.

Also out of place among the bones was an ear-plug of the pin-shape variety, made from the columella of a conch-shell and having a considerable knob at the head; and a small arrowpoint of flint.

Burial No. 8, partly flexed to the right, the head ESE., in a grave 2 feet in depth. Under the skull was some red pigment, red oxide of iron.

Burial No. 9, about one foot deep, had that part of the skeleton which is below the pelvis cut away by another grave. The head was directed SE. On the lower part of the thorax was a handsome celt of argillaceous, sedimentary rock somewhat exceeding 8 inches in length and plainly showing where the handle had been attached. Immediately on this implement lay a celt of iron or of steel, about 4 inches in length.

Several celts of this kind were found with burials at the Citico site, yet absolutely no other objects indicating contact with white people were present except four glass beads found with a comparatively superficial burial. One would expect in a site where the aborigines had been able to obtain iron from the whites that many other articles of European origin would be present. We were so impressed by this anomalous character of the deposits at this place that though we realized the chances of having found celts of meteoric iron (which, as the reader knows, could have been made by the aborigines without contact with whites) were small, we decided to have the matter definitely deter-

¹ "Some Aboriginal Sites on Mississippi River," Fig. 44.

mined by submitting one of the celts to Harry F. Keller, Ph.D. (whose tests, especially in the case of copper, have aided us to such an extent in the past), with the request that an examination of the celt be made with a view of determining the possible presence of diamonds and nickel. Dr. Keller reports as follows:

"The iron blade shows no distinct crystalline structure when etched with dilute nitric acid or with iodine, and careful chemical tests show that the metal is free from foreign metals such as nickel, cobalt, and copper. A solution obtained from several grams of the metal, after precipitating the iron, did not respond to that most delicate of reactions for nickel: the dimethylglyoxime test. There can be no doubt, therefore, that this iron is not of meteoric origin."

Here, then, we find the aborigines possessed of a number of blades of iron manufactured by the whites, and yet apparently having almost no other objects of European provenance.

Burial No. 10, in a grave 35 inches deep, was a skeleton partly flexed on the right, the head SE. At each side of the skull was an ear-plug of the pin-shape variety, about 6 inches in length. At the right of the cranium were the remains of a rattle consisting of the shell of a turtle or a tortoise, enclosing pebbles, and one valve of a large cockle (*Cardium robustum*), a marine shell. At the outer side of the left shoulder, grouped together, were: fragments of the shell of a turtle or a tortoise, with a number of small pebbles, mingled with which were some of the throat teeth of the fresh-water drum-fish (*Aplodinotus grunniens*),¹ which no doubt made an excellent substitute for pebbles; the penis-bone of some animal;² a bone piercing implement; nine musselshells (*Lampsilis anodontoides*). On the upper part of the thorax was a gorget of shell with scalloped margin, much resembling one shown by Thruston³ and by Holmes,⁴ which has incised centrally a triskele. With the gorget was a shell bead .75 inch in length. In the space between the femora (which the reader may recall were drawn up) and the trunk was a bowl of earthenware, 6.5 inches in diameter, undecorated save for six small lugs projecting from the margin of the opening.

Burial No. 11. This skeleton, 22 inches down, heading SSE., lay on the back, the right thigh extended in line with the trunk, the left thigh slightly bent toward the right one. Both legs were flexed to an acute angle with the thighs; the left forearm was flexed closely on the humerus.

Burial No. 12. In a grave 3 feet deep lay a skeleton partly flexed to the right, the head NW. At each side of the cranium was an ear-plug of the pin-shape variety; small shell beads were at the neck and at the right wrist. At the right hand was an earthenware pipe badly crushed, which has since been restored (Fig. 87).

¹ This variety of drum-fish frequents the Mississippi and its tributaries.

² This bone went astray when submitted for identification.

³ *Op. cit.*, Fig. 230.

⁴ "Art in Shell of the Ancient Americans," Pl. LVI.

This interesting pipe is of a form characteristic of the Citico site. McGuire¹ shows a pipe somewhat like ours as coming from Camden County, Ga., mentions another from Blount County, Tenn and says they apparently establish quite an interesting conventional treatment of the beak of a bird.

At the upper end of the left femur were three discoidals of fine-grained, igneous rock, each about 1.5 inch in diameter. Six slender arrowpoints of flint lay near the knees.

Burial No. 13 had been somewhat disturbed by the plow, but there were clear indications that the bones had been partly flexed to the right, the head NNW. Near the skull was a celt 5.5 inches in length, which was presented to Mr. Gardenhire, the owner of the property.

Burial No. 14, partly flexed to the right, the head SSE., had at the right shoulder a small, undecorated pot, a part of which had been plowed away.

Burial No. 15 consisted of remains of a skeleton somewhat disturbed but with parts in order. At the knees and neatly piled were twenty small arrowheads of flint, all triangular and all pointing the same way.

Burial No. 16, a child, the bones somewhat disturbed by an intersecting grave. With this burial were two discoidals of igneous rock, each about 1.25 inch in diameter.

Burial No. 17, about 2 feet deep, lay partly flexed to the right, head ESE. Under the lumbar region was a small flint arrowhead.

Burial No. 18, 32 inches deep, lay partly flexed to the right, the head SE. The left forearm was across the trunk. Under the skull and extending under the left shoulder and down the outer side of the humerus were fifty-nine mussel-shells, badly decayed and broken. Some of these shells were perforated at one end for suspension, as doubtless all had been, but parts of some which would have testified as to the fact, were missing. On the thorax were eleven similar shells; there were five on the lower part of the trunk, and nineteen on the outer side of the right forearm.

Burial No. 19 was a disturbance. At the left of the skull lay an undecorated bowl badly crushed.

Burial No. 21, partly flexed to the left, head E. by S.; depth, 3 feet. Near the skull were two pebble-hammers.

Burial No. 22, partly flexed to the left, head NW.; depth, 2 feet. At the neck were a number of marine shells (*Marginella apicina*) perforated for use as beads.



FIG. 87.—Pipe of earthenware. With Burial No. 12. Citico, Tenn. (About full size.)

¹ Joseph D. McGuire, "Pipes and Smoking Customs of the American Aborigines," Rep. U. S. Nat. Mus., 1897, Fig. 234.

Burial No. 23, partly flexed to the left, head NW.; depth 14 inches. On the thorax lay a gorget of shell, the surface much decayed away in places, which had borne a conventionalized design of the rattlesnake. Gorgets better preserved than this one and likewise having the design of the rattlesnake, will be shown in connection with Burials Nos. 41 and 56.

Lying immediately on the gorget was a ceremonial axe of porphyry, 5 inches in length, of the "hoe-shaped" variety.¹ These axes, which have been extensively figured by others as well as by ourselves, often show where the handle has been placed on them. We found, moreover, at Moundville, Ala.,² a shell ornament showing one of these axes set in its handle.

The ceremonial axe, including the South American type, has been interestingly discussed in the superb work of Verneau and Rivet.³

Near these, but some little distance from the skeleton, were two undecorated shell gorgets which had perhaps belonged to a much-disturbed burial, parts of which were nearby. To the left of the pelvis, grouped together, were a small chisel of iron or of steel (see our description of Burial No. 9); a flat pebble of flint, 3 inches by 2 inches, much chipped at one end as by use; six small arrow-heads, three leaf-shaped implements and two triangular, all of flint, ranging between 2.3 inches and 3.5 inches in length; also many flint fragments and chips.

Burial No. 24, partly flexed to the left, head NW., rested on Burial No. 23. On the lower part of the thorax was a celt which was given to Mr. Gardenhire.

Burial No. 26, partly flexed on the right, head SSE., both forearms closely flexed against the upper arms; depth, 2 feet 7 inches. Immediately on this burial were two slabs of cedar, each nearly 4 feet long and about 5 inches in width, which had been rudely split, not dressed like planks. On the left shoulder and extending down over the body were fragments of bones of lower animals. These fragments did not show decay and evidently had been broken intentionally. The following animals were represented, according to the identification of Dr. F. A. Lucas: raccoon, part of jaw; black bear, a large animal, parts of humerus and femur; Virginia deer, parts of vertebræ, foot-bones, shoulder-blade, etc.; wild turkey, upper part of tarsus; loon (*Urinator imber*) femur; soft-shelled turtle (*Aspidonectes spinifer*) cranium and shoulder-blade; Mississippi catfish (*Amiurus lacustris*) a big fellow, 75 to 100 pounds in weight, back of cranium.

On each side of the head was a shell ear-plug of the pin-shape variety, one of which had been moved slightly from the skull through some cause or another. Two similar ornaments lay side by side on the upper part of the thorax, the

¹ C. B. Moore, "The so-called 'Hoe-shaped' Implement," American Anthropologist, July-Sept., 1903.

² "Moundville Revisited," Journ. Acad. Nat. Sci. Phila., Vol. XIII, Fig. 99.

³ R. Verneau et P. Rivet. Ministère de l'Instruction Publique. Mission du Service Géographique de l'Armée pour la Mesure d'un Arc de Méridien Équatorial en Amérique du Sud, le sous Contrôle scientifique de l'Académie des Sciences, 1899-1906. Tome 6, "Ethnographie Ancienne de l'Équateur." Premier fascicule. Paris, 1912.

points toward the skull. The putting of an extra pair of ear-plugs with a burial by the aborigines is not new in our experience. Between the arms was a celt of quartzite, 3.3 inches in length, and a smaller one of fine-grained igneous rock rested between the elbows and pelvis. Nine arrowheads of flint, whose position was disturbed on removal, had been on the right knee.

Burial No. 27, partly flexed to the left, the head SE., the right forearm across the trunk; depth, 17 inches. On the lower part of the thorax was a marine univalve, dropping to fragments through decay. At the outer side of the left shoulder were two bone implements. Each of these had the end formerly in use greatly rounded either intentionally or through service. One, 8.5 inches in length, made from a femur of a deer, has the articular portion removed; and



FIG. 88.—Pipe of earthenware. With Burial No. 33. Citico, Tenn. (About full size.)



FIG. 89.—Pipe of claystone. With Burial No. 35. Citico, Tenn. (About full size.)

below, on one side, is a hole as for suspension. The other, about 8 inches long on which the articular part remains, is worked down from "the left ulna of a very large panther" (*Felis concolor*). We are indebted to Dr. F. A. Lucas for the identifications.

At the right elbow was a small, undecorated vessel of earthenware—a pot or possibly a wide-mouthed water-bottle. At the feet were fragments of rattles which had been perforated for suspension. In place within the tortoise or turtle shells had been, instead of pebbles, the rounded throat-teeth of the fresh-water drum-fish (*Aplodinotus grunniens*).

Burial No. 30, partly flexed on the right, head NW.; depth, 32 inches. At the neck were a few shell beads, and in the soil nearby, perhaps an adventitious deposit, was a disc made from part of a pottery vessel.

Burial No. 33, the remains of a badly decayed skeleton which had been partly flexed to the right, the head SE.; depth, 28 inches. Near the skull was a pipe of indurated clay, with a rim extending laterally, as shown in Fig. 88, after restoration. At the left shoulder were two chisels of shaly, sedimentary rock,

each about 4 inches in length, rudely circular in cross-section, and a celt 3.25 inches long, which was presented to Mr. Gardenhire.

Burial No. 34, the bones of a child, 20 inches down, which had been somewhat disturbed. At the neck were a number of shell beads, rudely discoidal as a rule, some small, but many nearly .75 inch in diameter. With the beads evidently had been suspended an undecorated gorget which lay on the chest. Broken ear-plugs were near this burial.

Burial No. 35, partly flexed to the right, the head SSE.; depth, 20 inches. Near the outer side of the left shoulder was a pipe of indurated clay, somewhat resembling the one found with Burial No. 33. The end of the portion intended

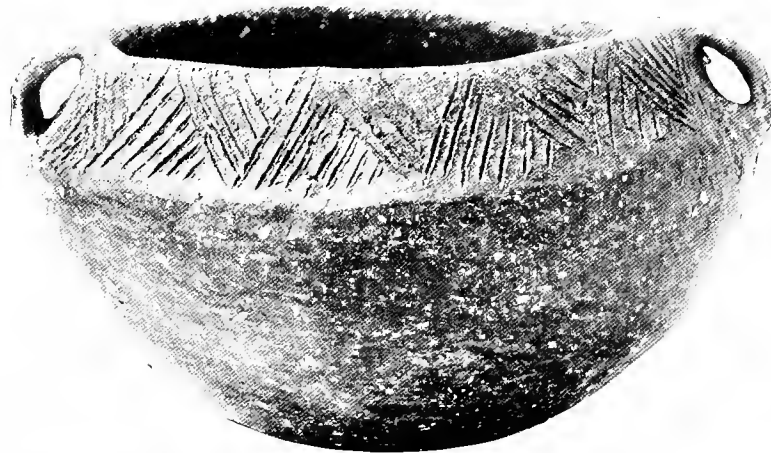


FIG. 90.—Vessel of earthenware. With Burial No. 39. Citico, Tenn. (Diam. 5.3 inches.)

to receive the stem had been broken and the ragged margin had then been smoothed to allow the continued use of the pipe (Fig. 89). About 9 inches from the left elbow was a celt of quartzite, about 5.5 inches in length, which may have belonged to another burial, scattered bones from which were nearby.

Burial No. 36, partly flexed on the left, the head SW. This burial lay in a grave-pit 4 feet 7 inches deep. The failure to find artifacts of any kind after the trouble taken in its removal was a disappointment.

Burial No. 39, a child. At the head were two shell ear-plugs, and two small vessels of earthenware, one undecorated, the other with loop-handles and a rude decoration of parallel, incised lines (Fig. 90). Shell beads were at the neck, and near the cranium was a rude stone ring of ferruginous, silicious rock, a natural formation helped out by art. On the skull, covering a very small area, was a green stain showing the former presence of copper.

Burial No. 41, a young child, 28 inches down. Large and small shell beads were on the neck, and on the thorax was a gorget of shell 5 by 6.5 inches, bearing an incised, well-known design of a conventional rattlesnake (Fig. 91).

The design of the rattlesnake highly conventionalized on gorgets, seems to be almost exclusively a product of the aboriginal art of Tennessee, practically all the gorgets of this class figured and fully described by Holmes¹ being from

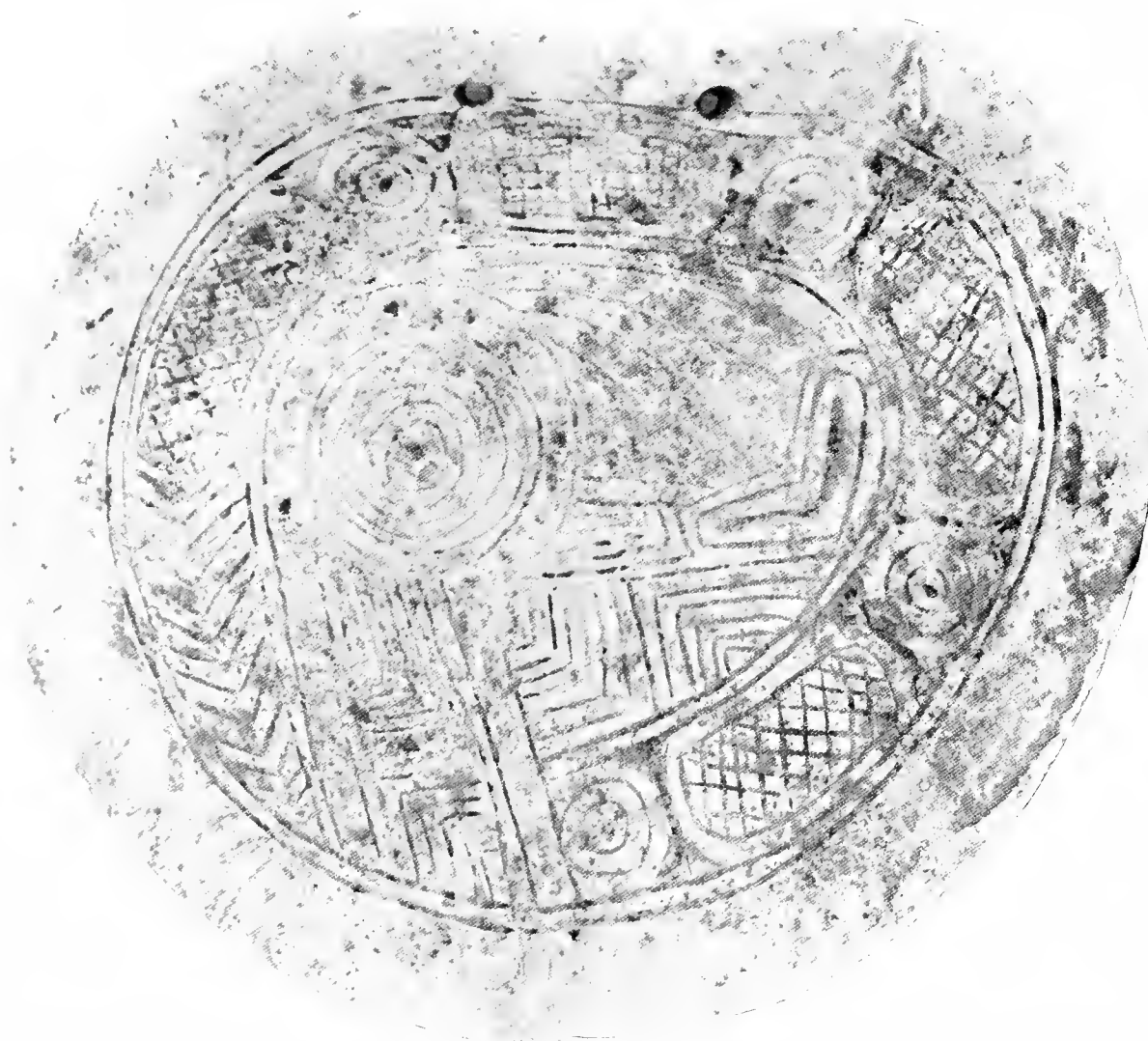


FIG. 91.—Gorget of shell, with conventional rattlesnake design. With Burial No. 41. Citico, Tenn.
(About full size.)

that state. Thruston² speaks of thirty or forty of these elaborately carved gorgets as having been found along the upper valleys of the Tennessee river (meaning from the tributaries of the Tennessee), and says of gorgets of this class: "The central head, the coiled body with its complicated and obscure involutions, the scaly surface, and the marginal band, are constantly repeated

¹ William H. Holmes, "Art in Shell of the Ancient Americans," Plates LXIII, LXIV, LXV, Figs. 4 and 6, LXVI, Fig. 2.

² *Op. cit.*, p. 331 *et seq.*

in the general design. Sometimes the strange, coiled figures can scarcely be recognized, yet, upon patient examination, the mythological serpent is always found to be represented." The gorgets of this kind figured by Thruston are taken from Holmes' "Art in Shell," and are from Tennessee. The earliest account of the design of the conventional rattlesnake on gorgets is by the late Jeffries Wyman.¹

Burial No. 42, a young child, 32 inches down, having shell beads at the neck and an undecorated gorget of shell on the chest.

Burial No. 45, a young child, 3 feet down. On the chest was a shell gorget in the shape of a mask representing the human face, 4.7 inches long and 3.8 inches wide.

Burial No. 46, a child; depth, 39 inches. A small discoidal of limestone was at the knees. Incidentally, it may be said that in the midden-debris at this place and on the surface were a number of small, discoidal stones, and stones of this kind were found with the burials of children. Also there were found many discs of pottery made from fragments of earthenware vessels, some of these discs being very carefully rounded. The small stone discs presumably were not of sufficient size to have been used in the game of chunky, but it is possible they were employed in some other game and may have been used interchangeably with the pottery discs. As the reader probably is aware, these discs of earthenware, found so widely throughout the United States, were used in ancient times abroad. They are found in Italian neolithic stations and in Egypt.³ Similar discs belonging to a pre-Roman period have been discovered in Basel, Switzerland.²

Burial No. 47. The trunk of this skeleton lay on the back, the right humerus along the body with the right forearm crossing to the pelvis. The left upper arm lay along the trunk, the forearm across it. The thighs were widely separated, the legs being flexed at an acute angle, bringing the feet together. The head was directed NNW. The burial was 4.5 feet deep. At the neck were small marine shells pierced for use as beads (*Marginella apicina*). On the chest, having been suspended by a string of beads, was a shell gorget of the human-face variety, 6.5 inches long by 5 inches in width. At the right and left wrists were beads of the same variety as those found on the neck.

Burial No. 49. The upper part of the trunk of this skeleton, which was 32 inches from the surface, was on the right side, the lower part on the back, the thighs being flexed to an almost vertical position and being, of course, near together. The legs were flexed down from the knees at an acute angle, being consequently near the thighs. The head was NE. At the right hand was a leaf-shaped implement of flint, 5.6 inches in length and 2.4 inches in maximum width.

¹ Fifth Annual Report Peabody Museum, p. 17 *et seq.*

² Angelo Mosso, "The Dawn of Mediterranean Civilization," pp. 88, 89.

³ Karl Stehlin, "Die Præhistorische Ansiedelung bei der Gasfabrik in Basel," "Anzeiger für Schweizerische Altertumskunde," Band XVI, Heft 1, p. 9.

Burial No. 50, a young child, bones badly decayed, 33 inches down, having shell beads at the neck.

Burial No. 51, partly flexed on the left, the head SSE.; depth, 3 feet. With this burial was a pipe of indurated clay, having a small part missing from the end which received the stem.

Burial No. 52, a child, the bones much decayed; depth, 34 inches. At the neck were shell beads, and at the chest a shell gorget of the human-face variety, very badly decayed. Beside it was a broken bowl of earthenware, undecorated except for small projections which probably represent head, tail, and fins, an effort to bring it into the effigy class.



FIG. 92.—Gorget of shell, having a conventional rattlesnake design. With Burial No. 56. Citico, Tenn. (About full size.)

Burial No. 53, a child, 40 inches down. At the neck were shell beads, each flat, oblong, and notched on two opposite sides, which had served to suspend a gorget lying on the chest, bearing an engraved design representing the conventional rattlesnake, part of which had scaled away through the action of moisture.

Burial No. 55, partly flexed on the right, head NW.; depth, 40 inches. Shell beads were at the neck.

Burial No. 56, a child; depth, 26 inches. On the chest was a shell gorget having the conventionalized rattlesnake design (Fig. 92).

Burial No. 57, a child, depth, 31 inches, having at the neck shell beads and on the chest a gorget bearing the design of a rattlesnake, conventionalized, part of which had scaled away. Over the pelvis were two vessels—a bowl with undecorated body having two small, flat handles projecting horizontally, in which, upright, stood a pot with two loop-handles and rude line-decoration on the upper part of the body which also was surrounded by a fillet. In this pot was the skull of an infant which probably got there through the great disturbance of burials prevailing in the elevation.

Burial No. 58, partly flexed to the right, head NE. by E.; depth, 6 inches. Shell beads were at the neck.

Burial No. 59, partly flexed to the left, head N.; depth, 16 inches. At the neck were 411 shell beads, in addition to broken ones, some globular with flattened poles, some barrel-shaped, the largest bead being about .75 inch in diameter.

Burial No. 60, partly flexed on the left, the right forearm across the trunk, the head SW.; depth, 35 inches. At the neck were small marine shells used as beads, very badly decayed, and at the chin was a gorget of shell on which had been engraved the usual conventional rattlesnake design, most of which, however, had decayed away. Both wrists were stained green by salts of copper. At the right wrist there still remained small, tubular beads of that metal.

Burial No. 61, partly flexed to the right. Some of the skull was missing through contact with a plow, which doubtless had carried away also a shell ear-plug of the "bracket" variety, one of which was found at the under side of the skull.

Burial No. 62. This burial must be considered in a synecdochical sense, a part for the whole. Presumably a skeleton wrapped in fabric of some sort and still further enclosed perhaps in hide, had been placed at the bottom of a grave about 35 inches deep. On the burial had been thrown very hot clay, filling the grave, which was 2 feet wide, to a depth of 11.5 inches. This clay, which the fire had turned red, had been sufficiently hot thoroughly to char the materials wrapped around the bones and the bones themselves, but had not been sufficiently heated to discolor the clay on the sides and the bottom of the grave. The bones and enveloping material at the base of the pit had a maximum thickness of about 3 inches. Above them, as stated, came 11.5 inches of brick-red clay, on top of which, to the surface, was the ordinary soil of the elevation.

Now, unfortunately, there remained in the ground but a section of the burial from which to draw conclusions, one grave having cut away the burial under description from the lumbar vertebræ up, while another grave, intersecting, had removed the skeleton from the pelvis down. There remained, then, to indicate the form of burial, but the pelvis, the lumbar vertebræ, and part of the forearm bones of the right side. Above these were sections of the grave as described.

This use of hot clay in connection with burials has been fully described in our account of the mound on the Bennett Place, Marion County, Tenn.

Burial No. 63, a child, 15 inches down, having a small, rude, stone disc at the chin and another at the right of the skull, one of slate, one of kaolinized, felspathic rock. Fragments of a shell gorget lay on the thorax.

Burial No. 65, the bones of a child, lying at a depth of 16 inches. Beneath the skull was a triangular arrowhead.

Burial No. 66, partly flexed on the right, the left forearm across the trunk, the head SW.; depth, 26 inches. A small, spool-shaped ear-plug of shell was at one side of the skull, but its mate, for some reason, was not found.

Burials Nos. 67 and 68, each a child having shell beads at the neck, 33 and 21 inches deep, respectively.

Burial No. 69, partly flexed to the right, with both forearms flexed against the humeri, the head SW. At the neck were six perforated pearls used as beads. A small celt of igneous rock was at the left shoulder. At the right side of the skull was a pile of graceful, triangular arrowheads of flint, thirty-two in number, all of which pointed in the same direction with the exception of five which were disturbed by the trowel, but no doubt had coincided in direction with the rest. With the arrowheads was a pipe of indurated clay, in fragments but since put together.

Burial No. 70, partly flexed to the right, with both forearms flexed against the humeri, the head SW.; depth, 37 inches. Under the right femur was a leaf-shaped implement of flint, 7 inches in length.

Burial No. 72, a child, 30 inches deep. Scattered around this burial were eleven small, flint arrowpoints of the usual triangular type found at this place, one beautifully serrated, which probably had been in a deposit with the burial of an adult, the bones of which the child's interment had greatly disturbed.

Burial No. 73, a child, 3 feet down, having near the skull the remains of a shell gorget which probably had swung out from the neck or chest at the time the burial was deposited. This gorget evidently had been attached to a string or strings of shell beads which lay in front of, and at the left of, the skull. Similar beads were found down the left arm and forearm, and along both thighs and legs. These beads, of moderate size, some discoidal, others globular with flattened poles, numbered 530. With them were 383 small marine shells (*Marginella apicina*) which had been pierced for stringing. Immediately under the chin, on the chest, were two discoidal stones, one of quartz, the other probably of some sedimentary rock, each about 1.5 inch in diameter.

Burial No. 75, a deposit of calcined fragments of human bones occupying a space 20 inches by 18 inches and having a maximum thickness of 2 inches, lay 10 inches below the surface.

Burial No. 76, lying partly flexed to the left at a depth of 28 inches, the head N. by W., was a skeleton having between the trunk and knees an inverted bowl, undecorated, somewhat crushed, which had been placed over an upright, undecorated bowl, also crushed when found.

Burial No. 78, partly flexed to the left, the right forearm crossing the pelvis,

the head SSE.; depth, 40 inches. A few inches from the left of the skull, with a small quantity of charcoal, was a deposit of seven celts of indurated shale, ranging in length between 3.25 inches and 9.5 inches, one being somewhat different from the ordinary hatchet or chisel. This tool, slightly more than



FIG. 93.—Pipe of earthenware.
With Burial No. 78. Citico, Tenn.
(About full size.)

6.5 inches in length, is flat on one side and convex on the other, and has, at one end, a cutting edge showing use. The tools in this deposit, which were horizontal and without uniformity as to the direction of the cutting edges, lay parallel to the skeleton and to each other, and were all in contact one with another, or nearly so. The implements had been arranged in two rows, the one nearest the skull consisting of two, one placed above the other, and two lying singly; the lower row being the large celt with two smaller ones in line with each other, beside it, the celts first mentioned in each row being nearest the bones.

Immediately under this deposit were the remains of a shell gorget of the human-face variety.

An earthenware pipe (Fig. 93) showing the conventional beak of a bird, a form prevalent at this place, lay at the inner side of the left forearm.

Burial No. 79, a child buried at a depth of 26 inches. Around the base of the skull lay a necklet made up of six tubular beads of bone, from 3 to 3.5 inches in length, fashioned from wing-bones of birds. This necklet evidently had held suspended an ornament of copper which had deeply dyed green one side of one of the beads. The metal ornament had been made from sheet-copper, circular in the main but having a small projection to accommodate a perforation for attachment. A circular opening in the middle has a diameter of about one inch.

At each ear was a small ear-plug of shell, having a groove to accommodate the encircling lobe of the ear. At the right wrist were four blue glass beads and a few crumbling beads of shell.

Burial No. 80, the skeleton of an adolescent, partly flexed to the right, lay at a depth of 18 inches, the head SE. In the angle between the flexed thighs and the pelvis was a deposit consisting of a flat pebble, roughly circular, about 2.7 inches in diameter, on which rested the remains of a large musselshell; four worked fragments of deer antler, three small, the other with a cutting edge and probably having served as a tool; a stone implement of a widely prevalent type, somewhat resembling a celt but having a blunt edge, and sometimes with a perforation at the upper end; two rude knives of flint.

Burial No. 82, partly flexed to the right, the head SSE., lay at a depth of 32 inches. At one side of the head was a shell ear-plug of the "bracket shape,"

its mate on the opposite side of the skull probably having been broken and thrown out by our digger who came upon the skeleton at the part where the ear-plug would be.

Burial No. 85 had the upper part of the trunk lying on the right side; the lower part and the thighs, which extended in line with the trunk, had been twisted so that they lay prone. The legs were closely flexed back against the thighs. The head pointed SE.; the depth was 20 inches. Above the legs was an undecorated pot, having two loop-handles.

Burial No. 90, partly flexed to the left side, the head directed SSE., lay near to, and at the same level as, the last-mentioned burial of a child whose bones had been somewhat disturbed by the later interment of those of the adult. Scattered at considerable distances apart, near the bones, were fragments belonging to shell gorgets of the type of the human face, which evidently had been broken at the time of the disturbance, as the margins of the broken parts showed the effect of time. Strenuous effort to recover all the fragments was unsuccessful.

Burial No. 94 lay with the trunk on the right side, but owing to the grave being narrow, the legs and thighs were flexed upward to the right. The head was directed WSW.; the depth, 18 inches.

Burial No. 95, the skeleton of a child about three years of age, lying 4 feet below the surface in a grave the beginning of which could not be determined in the comparatively homogeneous deposit of the ridge.

On one side of the skeleton two slabs, one of sandstone, one of limestone, had been placed obliquely over the skeleton, which lay partly flexed on the left side, facing the angle made by the slabs and the ground. These slabs did not rest at the same level as the bones, their bases having been placed 6 inches above the bottom of the grave, the upper margins being about a foot above the bones. The slabs, one of which slightly overlapped the other, provided a covering 25 inches in length. They were irregular in outline, their diameters being roughly about 1 foot 5 inches by 1 foot 2 inches, and 1 foot 2 inches by 1 foot, respectively.

At the neck of the child was a circular gorget of shell, about 2 inches in diameter, without decoration, having a single hole near the edge for suspension. Two small beads, barrel-shaped, were with the gorget.

Burial No. 96 was closely flexed to the left, the head SW., depth 16 inches. A radius having a united break, belonging to this skeleton, has been sent by us as a gift to the Army Medical Museum, Washington, D. C.

Burial No. 97, a child about five years of age, rested on the skeleton of an adult female (Burial No. 98), the head of the child on that of the woman, its body, so far as it extended, on and parallel to the lower burial. The woman's arms had not encircled the child.

Burial No. 98, partly flexed on the right, the head ENE., depth 30 inches. Both upper arms were against the body, as was the right forearm, the left forearm being flexed across the trunk. The skull of this skeleton was preserved.

A few inches from the head was a pot having two loop-handles and a row made up of six small projections encircling the body below the rim.

Burial No. 100, adolescent. The trunk lay on the back, the left arm and forearm along the trunk, the right arm being beside the body, the forearm across it above the pelvis. The thighs were flexed upward, the legs back against them. The head was directed SSE.; the depth was 18 inches. Three tubular, bone beads, each about 1.5 inch in length, were near the skull, which was saved in a somewhat damaged condition, and without the lower jaw, which was not present.



FIG. 94.—Pipe of earthenware. Citico, Tenn. (About full size.)

Here ends the list of burials found by us near the Citico mound, though doubtless many others were left behind, especially in the ridge.

So numerous were intersecting graves in parts of the elevation and consequent disturbances of burials that dissociated objects or artifacts with scattered bones were fairly plentiful in the soil, the following objects having been found in the elevation: a number of triangular arrowheads of flint; shell beads; three undecorated shell gorgets and one with a design partly decayed away; two earthenware pipes, one of which, shown in Fig. 94, belongs to the class representing a

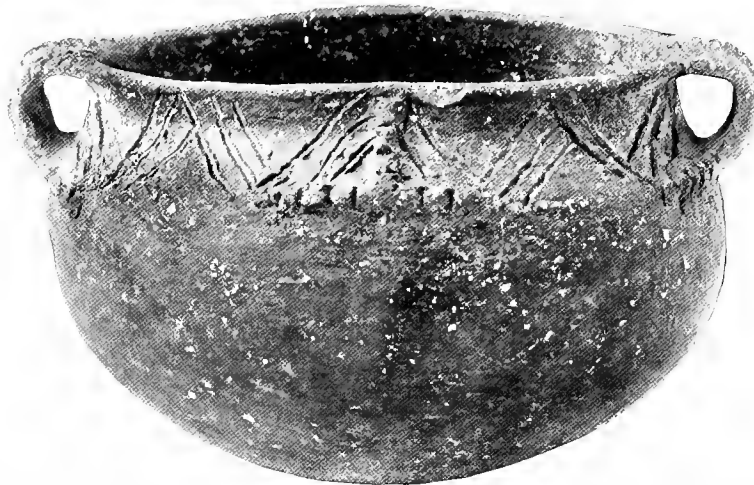


FIG. 95.—Vessel of earthenware. Citico, Tenn. (Diam. 7 inches.)

conventional beak of a bird, noted before at this place; one undecorated pipe of claystone; three undecorated pots of earthenware, one with rude, line decoration, another showing somewhat more ambitious endeavor (Fig. 95); an earthenware trowel, mushroom-shaped; a number of small, discoidal stones, one bicaeve; two small celts of iron or of steel; a leaf-shaped implement of flint, with part of one edge broken out; a bone tube 2.5 inches in length.

With scattered bones was a group of objects as follows: a bone piercing implement; a small cube of galena, artificially shaped, as the structure does not agree with the crystalline, or natural, cube; a bit of red oxide of iron; two rude or partly-finished arrowheads; a flat pebble resembling a celt in outline; some pebbles and parts of pebbles, of flint; one small mass of limestone.

With other disturbed bones was a deposit of flint arrowheads, unfortunately thrown out and scattered by the digger, from which twenty-two were recovered.

From the soil of the ridge came: discoidal stones and discs of pottery; a bead of bone, nearly one inch in length; a bicave of earthenware;¹ a pipe blocked out of claystone (Fig. 96); the lower jaw of a wolf, having, when found, a bone



FIG. 96.—Pipe blocked out but unfinished. Citico, Tenn. (Full size.)

piercing implement resting upon it; a fragment of earthenware from a considerable depth, the ware being tempered with fine particles of shell and having a superior, yellow slip bearing a decoration in red paint, very carefully conferred. This fragment, similar to one found on the surface, belongs to the same class of painted ware as do the two bowls found in Mound A at the Bennett Place, below Chattanooga (pages 338-352). At the Citico site apparently this fine ware was too highly prized to place it with the dead.

MOUND ON THE BELL PLACE, HAMILTON COUNTY.

The Bell Place, of which Mr. James S. Bell, of Hill City, Tenn., is the owner, is just above the union of South Chickamauga creek with Tennessee river. In a cultivated field at this place is a mound within sight from the river, slightly more than 10 feet in height and 60 feet across its circular base. This mound, covered with stumps and trees, had been so greatly dug into in various parts that no investigation was attempted by us. In sight from this mound were

¹ Dr. H. M. Whelpley refers to bicaves of pottery in W. K. Moorehead's "Prehistoric Implements," p. 165.

several slight rises which we were told were what remained of mounds that had been plowed away.

MOUNDS ON THE MCKENZIE PLACE, HAMILTON COUNTY.

On the McKenzie Place, of which Mr. R. N. McKenzie, of Chattanooga, Tenn., is the owner, are three small mounds in full view from the southern end of the C. N. O. and T. P. railroad bridge which crosses the Tennessee river at this place. These mounds, never of any importance as to size, have been dug into and plowed away to such an extent that no measurement would give any idea of their original dimensions or shapes. No investigation was attempted.

MOUNDS BELOW HARRISON FERRY, HAMILTON COUNTY.

Two miles below Harrison Ferry, on the right-hand side of the river, going up, is a group of four mounds, all in full view one from another and from the river-bank. Two of these mounds are on the property of Mr. James Hunter, living some distance back from the river, one symmetrical with circular base, having a diameter of 44 feet, being almost intact. Its height is 7 feet.

The other mound, also circular as to the base, is 48 feet in diameter and 7.5 feet in height, according to our measurement, which is uncertain, as masses of material thrown up by a previous digger have bushes growing over them and can not be distinguished from the mound proper. Permission to dig was not granted.

The remaining two mounds are on the Montgomery Place, which adjoins that of Mr. Hunter and of which Mr. J. H. Montgomery is the owner. The mound farther from the river-bank is 42 feet in diameter and 4.5 feet in height. An excavation about 5 feet by 8 feet was put down in the central part of this mound, passing through part of a former digging. In a portion of the mound not included by our predecessor, at a depth of one foot, was the skeleton of an adult lying partly flexed to the right. Part of a skeleton near this one, and at about the same depth, had been cut off by a former trench. In one part of our excavation was a thin deposit of musselshells (*Unio*) which included a mass of silicious rock in that part of the deposit dug through by us. This deposit of shells was about 32 inches from the top of the mound and seemed to be on what had been the original surface of the ground, though our measurement from the outside made it somewhat more. Cutting through the deposit of shells was a grave-pit, the starting-point of which we could not determine; its base, however, was somewhat more than 5 feet in depth. On the bottom of the pit lay the skeleton of an adult, extended on the back.

In the same grave as the preceding burial was a skeleton almost extended on the back but having the knees projecting somewhat to the right. At the left of the pelvis was the axis of a conch-shell, much decayed.

The other mound on the Montgomery Place had a diameter of 38 feet, the height being somewhat less than 8 feet. An excavation 8 feet 3 inches by 4 feet

9 inches was sunk by us, which passed down beyond a former hole and came to what was apparently undisturbed soil at a depth of 6 feet 8 inches, passing through a considerable deposit of musselshells at one place, mingled with which, without arrangement, were masses of silicious rock, most about the size of a human fist, some larger, some smaller. About 4 feet down was a skeleton flexed to the left, the skull somewhat disturbed, probably by the former trench. Between the thighs lay what had the appearance of a celt of shaly, sedimentary rock, about 5 inches in length, but the cutting edge was wanting, in its place being a surface nearly one-quarter inch in width. Between the legs, together, were three piercing implements of bone; a chisel about 4 inches in length, with pecked surface; and a small celt somewhat broken.

In a grave which extended into the original soil were four burials, all near together, two about 7 feet down, the other two probably 6 inches deeper. With none was artifact of any kind. The forms of burial were as follows: One closely flexed, face down, both forearms flexed back against the upper arms; two at full length on the back; one, extended, face down. An arrowhead of flint was at some distance from the bones.

A small and unpromising dwelling-site at this place was not investigated, owing to its being planted in vegetables.

MOUND ON THE HIXSON PLACE, HAMILTON COUNTY.

On the left-hand side of the river, going up, about opposite the middle of Dallas Island, is the farm of Mr. Foster Hixson, who resides nearby. On this farm, in sight from the river, is a mound in a cultivated field, which has been practically square, with a flat top. The height is 16 feet, the diameter, about 105 feet, of which 55 feet, approximately, is covered by the summit-plateau. No significant orientation distinguishes the sides or corners of this mound. There is a small site adjacent to the mound, having, however, little but fragments of stone on the surface. Permission to excavate not granted.

MOUND AT LOVELADY LANDING, HAMILTON COUNTY.

On the side of a low hill is a mound in full view from Lovelady Landing, on the property of Mrs. Jane Lovelady, of Pride, Tenn. The mound, in a cultivated field, and itself covered with growing wheat at the time of our visit, is fairly symmetrical. Its height is 6.5 feet; the diameter of its circular base, 50 feet. Owing to the growing crop on the mound no investigation was attempted.

MOUND NEAR LOVELADY LANDING, HAMILTON COUNTY.

Directly in line from the mound just described, and in sight from it, is a mound in a cultivated field belonging to Mr. Jesse Gann, who lives a little back from Lovelady Landing. This mound, 3 feet 8 inches high and 50 feet in diameter, covered with growing grain when we were there, has been much plowed over and doubtless considerably spread. We were courteously permitted to

put down a hole 6 feet by 9 feet in this mound, which was of sandy clay. Twenty-eight inches down was a deposit of musselshells (*Unio*), which covered much of the base of our excavation, about 6 inches in thickness in the middle parts and tapering at the margin to about half that thickness. This deposit contained here and there nine masses of silicious rock, the largest being about the size of a human head.

This shell deposit rested on a layer of dark soil which evidently represented the original surface, as beneath it was undisturbed ground. This deposit was carefully removed with a view of determining if burials lay immediately beneath or in grave-pits extending into the subsoil, but nothing was discovered.

Beyond the deposit of shells, however, was a skeleton extended on the back, 31 inches down, not in a grave, so far as could be determined, the burial having been placed, apparently, immediately on the original surface of the ground. Another skeleton lay 9 inches above, partly flexed on the right. The heads of these burials were directed toward exactly opposite points. The deeper burial apparently lay on the original surface, and the mound, in being piled above, had included the other burial, as no sign of a pit was discernible in connection with it.

MOUND BELOW IGOU FERRY, HAMILTON COUNTY.

About one mile below Igou Ferry, in a cultivated field, in sight from the river, on property belonging to Mrs. Mattie Igou, who lives upon it, is a mound 7 feet 6 inches high as measured by us from the outside, and 52 feet in diameter of base. This mound, which has a circular base, was fairly symmetrical, showing no sign of cultivation or of previous digging. Numerous trees, one of considerable size, were on the mound at the time of our visit.

A central hole, 9 feet by 16 feet at the top and somewhat greater at the bottom, was put down. About 6 inches below the blunt apex of the mound, Burial No. 1 was reached, which lay beneath irregular slabs of stone in the following way: First came two slabs of silicious rock, side by side, 1 foot 8 inches by 10 inches by 3 inches thick, and 1 foot 10 inches by 1 foot by 6 inches in maximum thickness, respectively. Immediately beneath these masses was a slab of limestone 11 inches by 9 inches by 2 inches thick. All these slabs, of course, were of irregular outline. A few inches below the slabs were the remains of a young child having near the head a pot of inferior ware, 3 inches in height, with a margin four times scalloped and below each elevation a small knob. About the neck and on the chest of the skeleton was a profusion of shell beads of various sizes and shapes, the largest ones being barrel-shaped and about .5 inch in length. There were also discoidal beads and diminutive tubular ones, some only about .1 inch long. With these were a few, small, marine shells pierced for use as beads.

Burials Nos. 2, 3, 4, 5 were widely apart in the limits of the excavation at respective depths of 22, 38, 36, and 38 inches, and consisted of, respectively: the decaying remains of a skull; two femora in fragments; teeth and traces of a

skull; a fragment of a femur. All these bones had belonged to adults. They were not, so far as we could determine, in pits.

Burial No. 6, at about 33 inches from the surface, in the central part of the mound but not immediately under Burial No. 1, was a grave-pit 3 feet 6 inches by 4 feet 6 inches, filled with musselshells, with which were mingled large pebbles, fragments of pebbles, masses of silicious rock, and one fragment of limestone. The thickness of this deposit was 10 inches. While the sides of the grave-pit surrounding the shells were clear-cut and perpendicular, it was impossible to say if the pit began with the shells or above them, as the material above the shells was precisely similar to the clay and sand of which the mound was composed.

Under this mass of shell and stone was the skeleton of a child lying at full length on the back, on whose skull had been placed a flat, quadrangular mass of mica schist, 11 inches by 9 inches by 3 inches, which had crushed the cranium. At the neck were many small, marine shells of two varieties (*Marginella apicina* and *Olivella mutica*), used as beads, apparently similar to others found with burials along the river. At the outer side of the right elbow and of the right femur, respectively, was the columella of a conch (*Busycon*), both ends of which, in each instance, had been clearly cut across and not broken. These columellæ probably were material in the rough for the manufacture of beads or of pendants, and probably are the "hearts" of shells such as were carried by Cabeça de Vaca on his journey early in the sixteenth century, to trade with the Indians.

The mound contained no fireplaces and, as we have said, no midden-debris. The upper part was yellow, sandy clay, varying in thickness from 3.5 feet to 4.5 feet; next came from 2 to 3 feet of similar material, though of a slightly darker shade; then the yellow soil of the upper part of the mound. Our excavation was carried through these strata and beyond to a depth of one foot, bringing the depth of the excavation to the measured height of the mound, but no basal line was encountered, nor were two good-sized holes sunk from the floor of our excavation to a considerable depth successful in determining the base.

Seven feet eight inches from the surface of the mound were two badly decayed tibiæ of an adult, side by side, no foot-bones or any other parts of a skeleton being present. These bones seemed to lie in a grave, judging from the fact that around them the soil was somewhat looser than elsewhere. Incidentally, it may be said that it is remarkable for what length of time, in some cases, soil that has been disturbed gives evidence of the fact through a certain lack of compactness.

It is impossible to say how far up the grave had extended, it having been dug down upon by one of our men. With the bones were: a mass of red pigment (hematite), on which rested a celt of slate, about 4.5 inches in length; part of a femur of some lower animal;¹ a tine of stag-horn; a triangular flint point, 3 inches in length; a mass of manganese ore, about 1.5 inches in diameter, ground flat on two faces; an irregular mass of limestone, about 2.5 by 1.5 inches; a rude disc

¹ This bone went astray when submitted for identification.

of the same material, about 2 inches in diameter, pitted on opposite sides; a small flint drill.

Probably the two tibiae (Burial No. 7) belonged to the same class of interments as did some of the others found in this mound. There is a chance, however, that more of the skeleton was present in the grave and was thrown back by the digger, inasmuch as four arrowheads, together, were found 2 feet from the tibiae and may have been a deposit with or near the remainder of the skeleton. This, however, is very unlikely, unless the bones were hardly more than powder, as not only was the digger watching carefully, but our entire party as well.

In the mound, apart from burials, were two arrowheads of flint, having stems and shoulders.

On parts of the field surrounding the mound was a slight sprinkling of midden-debris, with which were found four celts, two of them broken, one probably of schistose rock and showing a polished surface only where ground on its rather graceful cutting-edge. There came also from this site a conical pestle and four arrowheads.

DWELLING-SITE ON THE DAVIS PLACE, JAMES COUNTY.

A few yards from the river-bank, on the Davis Place, which is part of the old Thatcher Place and belongs to Mr. J. W. Davis, who lives somewhat farther back toward the hills, is a small, aboriginal dwelling-site, on the surface of which lay some debris. At one end of the site was a slight rise which seemed to have been a place of burial. In addition to bones disturbed by cultivation of the field, part of which the site was, five burials were encountered, as follows:

Burial No. 1, partly flexed on the right, the head SW., 10 inches down. A rude, undecorated pot lay in fragments near the cranium.

Burial No. 2, partly flexed on the left. The skull, which had been struck by a plow, had been directed N. by W.

Burial No. 3, partly flexed on the right, head NE., 18 inches down. Part of a celt lay at the inner side of the right elbow, while under the left arm was a pebble much resembling a celt in outline and probably a mortuary substitute for one.

Burial No. 4, a child, 15 inches down. On the chin, around the neck, and on the back of the head were forty discoidal beads of shell which probably had been strung around the neck but had been displaced when the body was laid in the grave. These beads, varying in size between 1.9 inch and .8 inch in diameter, are pierced through the lesser diameter, so that when strung they were face to face and were found by us in rouleaux.

Burial No. 5, the trunk on the back and thighs extended in the same line, the legs drawn close to the thighs, the feet to the right, the skull ESE., 14 inches down.

MOUND AND SITE ON THE ELDRIDGE PLACE, JAMES COUNTY.

Going about one-half mile by the road which leads from Eldridge Landing to the nearby hills, one passes the remnant of a mound in sight on the right of the road, in a cultivated field forming part of the property of Mr. J. F. Eldridge, resident on the place. This small elevation had a height of 2.5 feet, a diameter of about 50 feet. Midden-debris and fragments of human bones lay on its surface.

On digging out most of the central part of this mound it became apparent there had been much previous disturbance. Scattered bones, including several skulls, were found, with the bones being two celts, one given to Mr. Eldridge, and one of diabase, 5 inches in length, fairly well made though the cutting edge is not squarely conferred. There were also encountered in the mound six skeletons, the deepest 28 inches down, three of children, and three of adults, all closely flexed on the right, heading respectively S., S. by W., ESE. On the surface of the mound lay a graceful, triangular arrowhead of flint.

On this property, in the level ground, Mr. Eldridge informed us, there had been plowed up recently a human effigy of stone, about 1.5 foot in height, which a tenant had taken to Chattanooga and was, at that time, in that city endeavoring to turn the find to advantage by displaying it in a room to the public, with a charge for admission.

The Eldridge place enjoys the distinction of being the only one on Tennessee river in eastern Tennessee where groups of stone graves of the typical box-grave variety were encountered by us, though, as will be recalled, a single box-grave was found by us at the Bennett Place.

Over various fields on the Eldridge place were scattered sparsely evidence of aboriginal occupancy, including several arrowheads of flint and one of quartz. A short distance from the mound already described, debris of this kind could be seen and much prodding with steel rods was attempted, but the ground being naturally hard, and dry in addition, little effective work could be done. However, one stone grave, 7 inches from the surface, which had in part been plowed away, was found. The grave, 20 inches by 16 inches by 9 inches deep, had a flooring of slabs (as had all the stone graves seen by us at this place), and contained the skeleton of a child closely flexed on the right. About 300 yards ENE. from the mound, in a field of wheat, at the foot of the hills, slabs of limestone, of which material were all the slabs found here, lay on the surface. We were informed that a number of stone graves had been plowed into at this place, the contents of some of which had been examined. We were also informed, though the tidings were not of an encouraging nature, that in all the graves opened on the property, nothing had been found other than bones.

Three stone graves were found here by the use of the rod.

Burial No. 1. The slabs of this grave had been displaced and the bones in the main removed.

Burial No. 2. The top covering of this grave had been plowed away and the sides were down in places. Scattered bones were present.

Burial No. 3. The top and some of the slabs forming the sides of this grave had been plowed away, but sufficient remained to show that the grave, inside measurement, had been 22 inches by 15 inches, by 13 inches deep. On the floor in the center of the grave, lay the skull of an adult, immediately surrounded by the smaller bones and having the long-bones carefully piled on two sides of it and over it. The pelvis was at one end of the grave. All the space in this grave had been utilized, and it was jocularly remarked that there was no room for artifacts.

Two hundred yards, approximately, from the site just described, in an ESE. direction, in an adjacent field of wheat, was another small cemetery, on the surface of which lay a number of slabs where four stone graves were discovered by sounding.

Burial No. 1, 6 inches down, was 35 inches by 2 feet, by 17 inches deep, inside measurement. One end of the grave consisted of a single slab; the other end was made up of two slabs projecting outward and forming an angle in which the head of the skeleton rested. The sides of the grave consisted of one slab each, a small space at one side being filled with fragments. The sides stood erect, but their upper margins were very uneven, so that the top, consisting of four slabs, had fallen in. The burial lay closely flexed on the right, and, for good measure, perhaps, had on the left side, against the slab, the skull of an adult with some of the long-bones of its skeleton, and a femur and a tibia of a child. On the opposite side of the grave, against the slab also, lay a femur of still another adult, making five full-sized femora in the grave.

Burial No. 2. This grave had been disturbed superficially. The burial was made up of detached bones, but no skull.

Burial No. 3, a grave partly plowed away, having a few bones of the skeleton of a child remaining.

Burial No. 4. The top slabs of this grave, which was 2 feet 9 inches by 1 foot 11 inches, by 11 inches deep, and irregular in outline, had been partly plowed away, without disturbance, however, to the contents, which consisted of two bunched burials, each with a skull.

No artifacts were with any burials in the stone graves discovered here by us, hence the record of the place was maintained.

MOUNDS AND SITES ON HIWASSEE ISLAND, MEIGS COUNTY.

Hiwassee Island,¹ the property of Mr. and Mrs. P. D. Benham, who reside upon it, is about two miles long and one mile wide.

¹ Cyrus Thomas, "Catalogue of Prehistoric Works," p. 209. Hiwassee Island is described under the name of Jolly's Island, which it probably bore at one time, and twenty-four mounds are referred to as upon it, which might well have been the case, long ago, when the island was visited by Mr. J. W. Emmert, on whose information the statement is based.

This island, as to which there is a report respecting the finding of a stone image, has an added interest as being the starting point of a great chain of groups of comparatively low, conical mounds extending up Tennessee river to Lenoir City, a distance of 101 miles by water, as we have stated in the Introduction.

At the extreme upper end of the island, and in sight from most of it, is a mound (A) 22.5 feet in height,² which probably has been square or nearly so as to its basal dimensions, but at present, through wash in periods of high water, its outline is irregular. Its basal diameter is 136 feet, 58 feet of which are under the summit-plateau, which is flat, wooded, including an oak-tree of great age, and gives no indication of ever having been under cultivation.

At various distances apart, extending down the island, not in line, are three mounds, B, C, and D, while near together, toward the lower end of the island, are two mounds, E and F. There are also scattered over the island various humps and rises and parts of mounds that have been mostly plowed away. The more important of these mounds have dimensions as follows:

B, elliptical; 10 feet 3 inches in height, 63 feet by 48 feet in diameter.

C, circular; height, 8 feet 2 inches; diameter, 48 feet.

D, circular; height 9 feet 2 inches; diameter, 45 feet.

E, circular; height, 5 feet 7 inches; diameter, 30 feet.

F, circular; height, 9 feet 10 inches; diameter, 54 feet.

As the owners of the island take great interest in archæology, and desire, so far as possible, to preserve intact the mounds now on their island, none of those herein particularly described has been plowed over or dug into to any appreciable extent, excepting, of course, the one (E) investigated by us.

Mounds E and F were kindly placed at our disposal, but as we doubted our ability to restore the larger mound to its original condition in the time at our command (the prevailing low water of the river having been a great source of delay to us), we decided to devote our attention to Mound E exclusively.

To avoid disturbing trees, an excavation 10 feet long by about 6 feet wide was made somewhat away from the center. The mound was composed of sandy clay of a brown shade. Thirty inches down a fragment of decaying bone about one inch in length was encountered. Other than this fragment, no bones were discovered in the mound, nor was any fireplace or midden-debris found in the digging.

At a depth of 5 feet 10 inches an indistinct basal line was discovered, beneath which was undisturbed, yellow clay.

Not central in the excavation, but nearly so as to the base of the mound, a pit was discovered, 3 feet by 3 feet 4 inches, extending one foot into the yellow clay and filled with the brown soil of the mound. How far this pit extended

² In the 12th Annual Report of the Bureau of American Ethnology, p. 405, this mound is given as 35 feet in height, or about 12 feet more than the correct measurement. We would not refer to this error, which is very likely typographical, were it not that we are on record in this report as saying that the mound at Florence, Ala., is 42 feet in height, no other mound on the river approaching such a figure.

into the body of the mound, if at all, could not be determined. The contents of this pit were removed with the utmost care with the aid of a trowel, having in view the possible presence of a burial, but not even the crown of a tooth was unearthed.

Together, on the base of the pit, in a little pile, were: a hone of sandstone, elliptical in outline, 4.5 inches by 3.5 inches; a pebble-hammer, discoidal, 2.25 inches in diameter; a triangular point of flint, about 2 inches in length; an object of slate, about 5 inches long, resembling a celt but having a rounded, blunt edge and possessing on one side, at one end, a lustre, as if conferred by wear; a similar object of slate, slightly more than 3 inches long, having lost a part of one end through an unsuccessful attempt to make a perforation, and having a depression below the fracture where another hole had been attempted; still another object of slate, of the type of the foregoing, 3.3 inches in length, this one, however, having a perforation at one end.

In the neighborhood of Mound A are extensive dwelling-sites with considerable debris on the surface; but this being pasture land, the sites were not subject to investigation. Mr. Benham informed us, however, that some time ago his son and a companion had dug extensively in the sites, finding many burials with accompanying artifacts. A portion of the objects discovered was inspected by us at Mr. Benham's home on the island, and while the objects are of much interest as illustrating the aboriginal culture that prevailed on the is and, the collection contained nothing notable, the pottery being of inferior ware and of inferior form, while no object of flint of exceptional interest was present. The only engraved shell gorget in the collection bore the triskele surrounded by the conventional rattlesnake. Glass beads and objects of brass also were present.

MOUNDS NEAR ARMSTRONG FERRY, MEIGS COUNTY.

Mounds on property of Mr. A. F. Armstrong, living near them. Two about one mile below Armstrong Ferry, 200 yards apart approximately; one about one mile above the ferry: all in open fields. The dimensions estimated by our agent, an expert judge of the matter, are, respectively, basal diameter 40 feet, 50 feet, 40 feet; height, 6 feet, 9 feet, and 8 feet. Permission refused.

MOUNDS NEAR MOUTH OF MUD CREEK, RHEA COUNTY.

Mound at the lower side of Mud creek, one-half mile NNE. from the mouth, and 100 yards N. from Mud creek, 40 feet by 40 feet by 6 feet. Three hundred and fifty yards N. from the first mound, in open field, is another, 40 feet by 40 feet by 7 feet. At the river, just below the mouth of the creek, a campsite. Mounds visited by our agent and dimensions estimated by him. Owner, Mr. Summerfield Fisher, resident on the property. Permission not granted.

MOUNDS NEAR GILLESPIE LANDING, RHEA COUNTY.

Near the river, on the Gillespie Place, belonging to Mr. J. W. Gillespie living about 1.5 mile back from the landing, are two mounds about one mile apart,

5 feet and 6 feet in height, respectively, and each about 40 feet in diameter, according to the estimate of our agent. Permission refused.

MOUND NEAR HOYAL FERRY, RHEA COUNTY.

About one-quarter mile westerly from Hoyal Ferry, in a cultivated field, on property belonging to Mrs. Harriet W. Hoyal, of Spring City, Tenn., is a mound 5 feet 9 inches in height and 35 feet in diameter. The mound had been trenched into from two sides and some of the margin had been plowed away, but much of the mound still remained intact.

Nearly centrally we put down a trench 12 feet 6 inches in length, and averaging about 7 feet in width. A short distance down were fragments of human bones in the old digging, and a knife or an arrowhead, of flint, also a triangular point of black flint, about 3.5 inches in length.

The digging continued through the brown soil which composed the mound without reaching fire place or burial, until at a depth slightly more than 6 feet small parts of a human skull were discovered, with remains of teeth. At a distance from where the skull had been, with no bones intervening, were decaying fragments of two femora, side by side, the space between which and the skull being about what would be expected to accommodate the remains of the trunk. Farther along no trace of leg-bones or of the feet were discovered. Near the skull, or what was left of it, was considerable red pigment and the following objects grouped together: two piercing implements of bone, in fragments; a disintegrating mass, probably what remained of a hoe of sandstone; a small triangular point of flint; a graceful arrowhead, resembling a drill, also of flint; a celt of shale, about 4.3 inches in length; a tool of shale, of the kind found by us in the mound at Hiwassee Island, 4.5 inches long and 1.4 inch in width, having a curved, blunt edge at one end and a perforation about .75 inch from the other end. We speak advisedly of this implement as a tool, since the blunt edge gives evidence of the fact, being rubbed and striated on half of each side.

At a depth of 6 feet 6 inches, compact, yellow clay was encountered, evidently previously undisturbed. No base-line was distinguishable, and the bottom of the mound probably had been somewhere between the yellow clay and where the burial was found.

Three intelligent boys, sons of the tenant cultivating this place, said that a man traveling down the river in a house-boat in search of antiquities (the agent of a dealer, no doubt) recently had visited the place and had bought from them all the "Injun spikes" they could find for him on the surface. They added the significant information that the man also was acquiring quantities of fragments of flint.

MOUNDS ON THE SPENCE PLACE, RHEA COUNTY.

About one-quarter mile back from the river, on the Spence Place, Mr. Albion Spence, owner and resident thereon, on the beginning of the slope of the hills, some in sight from the river, others masked by light woods at the time of our

visit, are six mounds. These mounds, parallel to the river in an irregular line, seemed to be from 5 to 9 feet in height and from 30 to 50 feet in diameter of base, the smaller ones having been under cultivation and doubtless reduced in size. Permission not granted.

MOUND ON THE JONES PLACE, MEIGS COUNTY.

About one-half mile in a straight line from the landing at the Jones Place, from which it is visible, was a mound 5 feet 2 inches in height and 37 feet in diameter, on property belonging to Mr. J. P. Hegler, of Decatur, Tenn.

The mound, in a cultivated field, did not seem to have been plowed over, and the presence of large trees upon it prove that no cultivation could have taken place there for a long period.

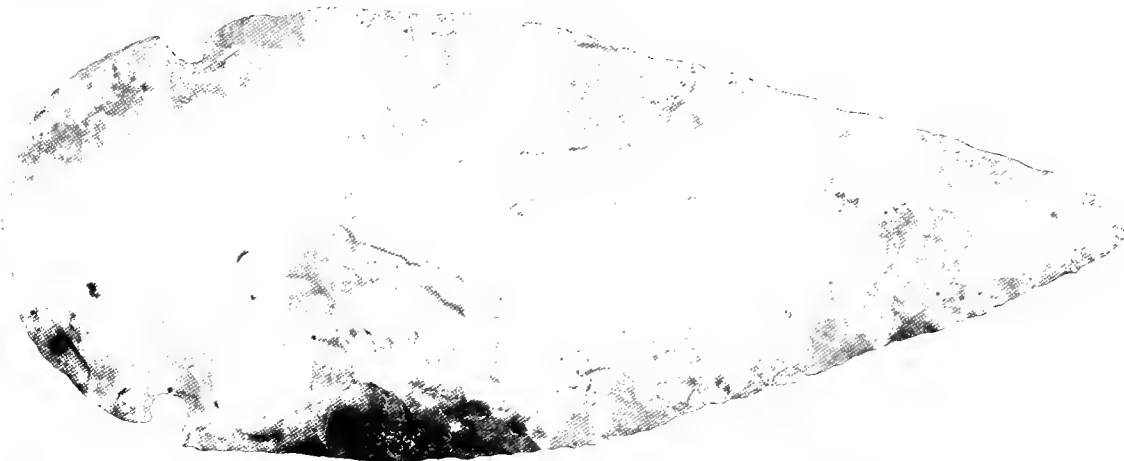


FIG. 97.—Spearhead of flint. Jones Place, Tenn. (About full size.)

Previous to our coming, a trench about 8 feet across had been carried into the mound, but digging had been discontinued some distance from the center.

A central excavation 11 feet by 12 feet was sunk by us, which included but a small part of the previous digging. Fourteen inches from the surface a mass of limestone was reached which projected above a number of other masses—not slabs—with which it was, and at a depth of 3 feet 5 inches was a group of similar masses of all sizes and shapes, some having thrice the bulk of a human head or more, some much smaller. These two groups evidently had been arranged with some definite design as to shape, but the upper group had been disturbed by an excavation of which there was no evidence on the surface of the mound, and in which we found a fragment of a glazed jar, while part of the lower group had been cut away by the trench we have described. Consequently, we were unable to form a definite idea of the original arrangement of the masses.

The loamy material of which the mound was made, which lay under these masses of rock, was examined by us with the utmost care down into the yellow, undisturbed clay which underlay the mound at a depth of 5 feet 10 inches. No

trace of bones or of artifacts was discovered, however, nor was there any sign of a pit extending below the base.

Off at one side of our excavation—the side farthest from the masses of rock—a grave 6 feet 9 inches long by 4 feet wide, the major axis about due E. and W., was discovered, the brown loam of the mound extending into the undisturbed underlying clay to a depth of about 1 foot 9 inches. On the base of the grave were particles of charcoal, and on both sides, but not at the ends, were masses of charcoal and ashes, as if there had been a fire preliminary to the placing of a burial and the coals and ashes had been swept to each side to make way for it.

The entire contents of the grave was slowly sliced away with a trowel and resulted in the discovery of traces of leg-bones, and remains of two femora, apparently in anatomical order and not visibly affected by fire. Alongside one of the femora was a graceful weapon of flint (Fig. 97), notched on each side for hafting, which we recognized to be of a rare type. Dr. H. M. Whelpley writes us: "The broad, notched flint is uncommon in shape and the notches are rare as to position. I do not find in my collection a piece which I can call similar." Mr. Charles C. Willoughby kindly has sent us a tracing of a much smaller point than ours, but of the same type, which is in the Peabody Museum collection. It came from Chichen Itza, Yucatan.

MOUND ON THE McDONALD PLACE, RHEA COUNTY.

Mound in sight from landing on the McDonald Place; owner, Mr. Joseph McDonald, Dayton, Tenn. Height and diameter of mound, respectively, 7 feet and 50 feet (estimated). Permission not granted.

MOUNDS NEAR COOK LANDING, RHEA COUNTY.

On the estate of Mr. M. G. McDonald, residing nearby, are three mounds in a cultivated field, in line and but a short distance apart, all in sight from Cook Landing, and another mound in the same field, nearly half a mile easterly from the northernmost mound of the three.

Mound A. The southernmost, 3 feet 3 inches in height, 50 feet in diameter, much spread by cultivation. A hole 12 feet by 12 feet was put down, reaching a base-line at a depth of 4 feet and coming upon traces and fragments of bone at various depths.

Mound B, a remnant next in order, 1 foot 9 inches in height and 40 feet in diameter. Digging came upon parts of a skull.

Mound C, slightly more than 7 feet in height, with a diameter of 42 feet, had never been under cultivation, but unfortunately it had received the attention of previous diggers who had left a circular hole centrally in the mound, about 6 feet in diameter and reaching almost to the base. In the side of the mound also had been an excavation about 9 feet by 7 feet, probably reaching to the level ground. A central excavation 12 feet square was carried by us to a depth of 7 feet 5 inches, where undisturbed yellow clay was encountered, the base of

our excavation being thoroughly cleaned out in a vain search for pits. On the base, however, was some charcoal which we at first thought might indicate the presence of a burial beneath, but the material lay on the same yellow clay which was under the mound.

One foot from the surface was a skeleton much decayed, lying partly flexed to the left. Twenty inches down were some bones disturbed by the previous hole in the center. At a depth of 5 feet 9 inches lay a decaying skull alone. A skeleton partly flexed on the left lay at a depth of 6 feet 4 inches.

Two feet down, together, were two bowls of inferior, porous ware, without decoration. No human remains were found near this pottery, but possibly they were removed during the former excavation.

Dissociated in the soil was a carefully-smoothed celt, 6 inches in length, without a cutting edge.

Mound D, evidently long under cultivation, having a circular outline of base, had a diameter of 100 feet, a height of 6 feet. Regarded from the lower part of the slope on which it is, the mound seems considerably higher. As it had become evident to us that all the mounds on our list could not be dug into in a season's work, an investigation of this mound was not attempted. Around it had been an extensive dwelling-site, judging from the dark soil and from some midden-debris on the surface, on which several arrowheads and discs of pottery and of stone were picked up. Considerable digging in this site came upon one skeleton, which lay partly flexed on the right, 21 inches down.

MOUNDS NEAR VINIARD LANDING, RHEA COUNTY.

Viniard Landing is about one mile above Cook Landing, and is also on property of Mr. M. G. McDonald, whose mounds at Cook Landing have just been described. We learned that Mr. McDonald hitherto had objected to any digging into his mounds, not desiring to have them disturbed by other than scientific exploration. All of Mr. McDonald's mounds were cordially placed at our disposal, a courtesy which the Academy greatly appreciates.

About one-quarter mile following the road in from Viniard Landing, which there traverses a cultivated field, in the verge of woods, all but one visible from the landing when foliage does not intervene, are six mounds, three near together and forming a triangle (A, B, C), and three others (D, E, F) a short distance apart and comparatively near the three mounds just described. About one-quarter mile NE. from Mounds E and F are two others (G, H) in a cultivated field and having themselves been plowed over and planted upon.

Mound A, the first visible going upstream and the most westerly of the triangle, was slightly less than 5 feet in height and 35 feet across its circular base. But little previous digging had been attempted in it.

An excavation 12 feet by 14 feet reached yellow clay at a depth of 4 feet; presumably wash of water had removed soil to the depth of a foot from around the mound.

Twenty-five inches down was a skeleton, much decayed, partly flexed on the left, the head W., and in another part of the excavation the skeleton of an adolescent lay partly flexed on the right, the head S. One of these burials seemed to be in a grave and the other probably was also. It was dug down upon by one of our men before this question was determined.

About centrally in the base of the mound was a pit, 4 feet in length, extending 6 inches into the yellow, undisturbed clay. The width of this pit was not ascertained, as the margin of the grave was partly dug away before its presence was noted. Though the digging was closely watched, it is possible that part of the burial was removed, as the remains, of which only a skull was found, were hardly more than a trace.

Mound B, 110 feet about E. from Mound A, 9 feet 9 inches in height, 60 feet across its circular base. No sign of previous digging.

Mound C, 100 feet NE. by E. from Mound A, 12 feet in height, base circular, diameter, 73 feet. A large trench had been dug in from the eastern side.

Mound D, about 270 feet E. by N. from Mound B; height, 6 feet; diameter of circular base, 42 feet. This mound had been dug into to a slight extent. A large tree on top and others on the slope made the mound a mass of roots.

Mound E, 50 feet NE. from Mound B; height, 9 feet; diameter of circular base, 50 feet. It is encircled by a well-defined ditch slightly more than one foot deep. The mound forms a very symmetrical cone, slightly truncated. A trench had been dug in from the eastern side prior to our visit.

Mound F, 120 feet N. from Mound E; height 5 feet 4 inches; elliptical base, 40 feet by 48 feet. Two small previously-made holes were noted, one in the summit, the other in the side.

A hole 12 feet by 12 feet was sunk by us, which soon passed beyond the small hole referred to and reached yellow clay, which was encountered 5 feet 2 inches below the top of the mound. No sign of burial or of artifact was encountered in the body of the mound, which was made up of two layers, the upper one of yellow, loamy clay, about 2 feet thick, and the lower one of brown clay containing some sand about 3 feet in thickness. No pit had cut into the light-yellow layer from the surface, nor had any grave originating in that layer extended into the brown stratum below it.

The base of the mound was scraped clean by us, showing yellow, undisturbed clay all over, except at one place where a grave 7 feet 6 inches long by 4 feet 2 inches wide extended one foot into the otherwise undisturbed soil. This grave, which was not central in the base, but commenced at about the center and lay ENE. and WNW. (the same direction as the major axis of the mound), the eastern end being the one away from the center, had been dug only from the original surface down and then the mound had been built upon it. This was evident because at each side of the grave was piled the yellow clay dug from it originally, while the grave itself was filled with the brown material composing the lower stratum of the mound.

On the upper part of the grave, somewhat above its base, at one side, was a deposit of charcoal, and a small amount of the same material was at one end of the grave, also near its upper surface. In neither instance did the clay near the charcoal show any mark of fire.

The entire contents of the grave were removed by hand with a trowel, the material being carefully sliced away under critical examination. Near the middle of the grave was the faintest trace of what may have been a small part of a single bone. No artifact was present.

Mound G, 10 feet 3 inches high, 65 feet across the circular base. A surprisingly symmetrical mound, and especially so in view of the fact that it has been under cultivation. No previous digging was apparent.

Mound H, 138 feet ESE. from Mound G, 7 feet high, 50 feet in diameter of base. No former digging was noticeable.

A hole 12 feet by 12 feet was put down. The mound differed from others at this place in that, especially in the lower parts, it contained many irregular local deposits of material of a darker color than was that of the rest of the mound. These deposits were not in layers, but seemed to have been brought from a place other than where the rest of the soil had been taken, perhaps from a swamp which is nearby. In digging from above these deposits of dark material were misleading, as they seemed to indicate the presence of graves.

Burial No. 1. In a grave apparently was a burial 32 inches down, at full length on the back, head W. by S. At the left of the pelvis was a flint knife with shoulders, a considerable part of whose pointed end had been broken off. The margin of the fracture had been chipped to confer a cutting edge. Five fragments of the columella of a conch, much decayed, were at the neck, two at the left elbow, one at the left hand.

Burial No. 2. A skeleton closely flexed on the left, head S., was 5 feet 10 inches down, seemingly in a grave.

Burial No. 3, a skeleton partly flexed to the left, the head WNW.; depth 7 feet.

Burial No. 4, at one corner of the excavation, partly flexed to the left, the head SW. by W., very badly decayed. At the pelvis of the skeleton was a small arrowhead of flint. This burial lay at a depth of about 8 feet, and probably was on the original surface, but when it was discovered heavy rain was falling and had been for some time. The base of the excavation was a mass of mud and remained so during the time our work in the mound continued. Consequently determination as to the exact base-line of the mound was not possible.

Incidentally, it may be asked why digging is not postponed in mounds when conditions arise interfering with thorough investigation. Postponement in investigation of mounds in a region where visitors are numerous is inadvisable, especially when the work is nearing the base, as outsiders are likely to finish the digging in one's absence.

Burial No. 5, partly flexed to the right, the head SW.; depth, 8 feet.

Dissociated in the mound were two or three small arrowheads or knives, of flint.

MOUND ON THE LUTY PLACE, RHEA COUNTY.

The Luty Place adjoins that of Mr. McDonald and belongs to Mrs. James Luty, of Rhea Springs, Tenn. This mound, in view from the landing, has been plowed out of shape by long-continued cultivation. Its height at the time of our visit (when it was covered with a growing crop) was 6.5 feet; its diameter, about 90 feet. The obstacle to investigation encountered at this place, namely, the presence of growing grain, while resulting in no inconvenience in this instance (as the mound, which seemed to have had a flat top, presumably had been a domiciliary one, and, moreover, seemed practically to form part of a group we had no desire to expend additional time upon), was one we had to face from this time, about April first, until the end of the season.

MOUND ON THE KEYFORVER PLACE, RHEA COUNTY.

On the crest of a low hill overlooking the river, on the verge of woods, is a mound on the property of Mrs. Ellen Kyle, who lives upon it, which is visible from the water when the foliage does not obstruct the view. The mound, never under cultivation, on a slope, depends considerably, as to its height, on the point from which measurements are taken, one about midway on the slope giving an altitude of 4 feet 8 inches. The diameter of base is 45 feet.

A hole, 10 feet by 10 feet, showed the mound to be of yellow clay of almost the same color as the underlying ground. A line, seemingly that of the base, was encountered at a depth of 4 feet, and on it a small amount of charcoal was found. No artifacts or bones were discovered, though the bones, presumably, had disappeared through decay.

MOUNDS ON THE KIMBROUGH PLACE, RHEA COUNTY.

The Kimbrough Place, belonging to Mr. R. B. Kimbrough, who lives upon it, is on the left-hand side of the river, going up, opposite Piney Island.

Shortly after passing the lower end of the island a remnant of a mound is visible in a cultivated field on the Kimbrough Place, possibly a foot in height and 40 feet in diameter. From it, we were informed by Mr. C. C. Brown, who lives nearby, two similar objects of copper, one of which subsequently was lost, were plowed up by his sons. The other, obtained by us from Mr. Brown, is a ceremonial axe, such as were found by us in considerable numbers at Moundville, Ala., and especially resembles those referred to in a previous report.¹ These ceremonial axes, made of native copper hammered in the usual way, on which parts of the wooden handles in some instances remained in place when found, resemble long chisels with flaring edges, the edges, however, bearing ceremonial notches.

¹ "Certain Aboriginal Remains of the Black Warrior River," *Journ. Acad. Nat. Sci. Phila.*, Vol. XIII, pp. 154, 157, 162, 163, 173; Figs. 28A, B, 33, 61.

The axe obtained from Mr. Brown, which had been badly battered since its discovery, is 10 inches in length and slightly more than .25 inch in maximum thickness. The flaring blade (on which traces of notches are still visible) is about 1.5 inch in width, while the opposite end is .5 inch wide. The weight is twelve ounces.

An employee of Mr. Kimbrough, the owner of the property, also plowed from this mound, according to Mr. Kimbrough, a ceremonial axe of native copper, of the same kind as the other, which Mr. Kimbrough values highly and has preserved in perfect condition. The length of the axe, which we carefully inspected, is 16.75 inches; its maximum thickness about .2 inch. The minimum width, which is at the end opposite the blade, is .17 inch. At the union of the flaring blade with the body of the axe the width is .9 inch; and that of the blade, on which are thirteen notches, is 1.5 inch.

Later we saw a son of Mr. Brown who showed us a bicave of quartz, with central perforation, very symmetrical, about 6 inches in diameter. This handsome specimen, which we were told had been plowed from the mound from which the ceremonial axes were taken, was in use as a soap dish.

We also obtained from Mr. Brown, as having come from the place, though there seems some uncertainty as to just what part of it, a small celt, a grooved axe, and what has been called an anvil-stone, similar to one figured by Thruston.¹

Farther along, in an adjacent field on the Kimbrough Place, is a mound in sight from the landing, which has been largely plowed away. Its height was 3 feet 4 inches; its diameter of base, 47 feet. On the surface are many slabs of fossiliferous limestone and some fragments of human bones.

This mound, which was made up of clay mixed with sand, was suitable for the use of a sounding-rod, which was freely employed. In addition, trial-holes were put down throughout much of its higher parts. Fragments of a skull were found in two instances, near the surface.

At a depth of 13 inches was a stone grave differing from those found by us so far, in that the burial lay between horizontal placements of slabs but having none on the sides and at the ends. A much-decayed skeleton lay closely flexed to the right, the head WNW., the right forearm flexed up to the shoulder, the left forearm lying across the body. On the skull was a small slab of limestone (all slabs from this place were of this material), and a long, narrow slab lay across the upper part of the thorax. A third slab was over the pelvis and lower extremities.

Beneath the skull and the upper part of the thorax lay a slab; another had been placed beneath the trunk; a third was under the pelvis and extremities.

All the slabs in connection with this burial had been carelessly placed, there having been no attempt to avoid leaving open spaces, of which there were a number.

In two places in this mound were two lines of slabs arranged in a slanting

¹ *Op. cit.*, Fig. 172.

position. These, beyond doubt, had formed parts of graves of a kind we found in another mound at this place. The graves in the mound under description had been largely plowed away. No trace of bones remained near the slabs.

On the line between the Kimbrough Place and the property of Mr. C. C. Brown, which adjoins it, is a mound visible from the river-bank. This mound, about evenly divided by a fence, has a diameter of about 45 feet. The height of the southern half, which is on the Kimbrough Place and has not been under cultivation, is about 5 feet 8 inches. The other portion, long plowed over, and covered with growing grain at the time of our visit, is considerably lower.

Our investigation was first directed to the southern side of the mound, on which were some trees of rapid growth (poplar) and from which a marginal part had been plowed away, though, as we have stated, this side of the mound had not been plowed over. Many slabs which had been unearthed in the plowing, lay around.

In an excavation in the middle of this southern half of the mound we found a pile of bones in no anatomical order, at a depth of 14 inches, which may have been a bunched burial or an aboriginal disturbance, as near it, but lower, was a stone grave without slabs at the sides, ends, or bottom.

Twenty-eight inches down was a skeleton partly flexed to the left, the head W., the partial flexion of the remains causing the knees to project from the line of the body. Above the skeleton had been placed an oblong arrangement of two thicknesses of flat fragments of limestone in line, all small or of moderate size, from a side of which, at right angles, was a projection of similar slabs arranged to cover the knees, the entire covering, however, being in excess of the area required to protect the skeleton.

Also in the southern part of the mound, 22 inches down, lying partly flexed to the right, the head NW., was a skeleton with no slabs in association.

Not far from the other was an interesting form of stone grave in the shape of a right angle composed of a single thickness of slabs unevenly placed. These lay nearly 3 feet from the surface, above the skeleton of a child, partly flexed to the right. Covering this skeleton, or nearly doing so, for part of the skull was exposed, was one side of the angular grave, having a length of 42 inches, a width of 22 inches. A head-piece had been placed about vertically. Slanting down from this head-piece was a slab covering most of the skull, the rest of the skeleton being protected by two other slabs in a horizontal position.

From the head of the line of slabs was an extension at right angles, 2 feet in length and 17 inches in width, made up of single slabs. The purpose for this extension was not apparent, inasmuch as no part of the skeleton projected beyond the line of its covering slabs, the part of the skull exposed being so through an irregularity in the shape of the slab immediately above it. No sign of bones or of artifacts lay beneath this extension.

In the northwestern, or cultivated, part of the mound, was a burial of a new variety so far as our experience along the Tennessee extends. It is interesting

to compare, however, the description of an almost identical form of stone grave found in Ohio,¹ the illustration given therewith very closely resembling the grave discovered by us.

Near the base, yet not far from the surface, as it was away from the center of the mound, was a rude flooring of slabs, horizontally placed except two, which were upright, having been thrust in to fill small gaps. This flooring, which was roughly circular, was about 6 feet in diameter. Next a kind of enclosure had been arranged around the flooring, made up of large slabs on edge, in double thickness, sloping outward, and projecting upward, a few inches on an average, above the stone pavement. The basal diameter of the whole grave, still irregularly circular, was about 11.5 feet.

About centrally on the floored space lay a skeleton partly flexed on the left, the head ENE. No sign of slabs or of masses of rock was above the grave.

In the northeastern part of the mound, 28 inches down, not far from the base, slabs had been piled horizontally, often with small spaces between, in one thickness usually in the outer parts of the flooring, but in two, three, and even four thicknesses elsewhere. The flooring, however, was level on the whole, at places two or more thin slabs being used to equal a thicker one.

The outline of the flooring, which was not surrounded by slanting slabs as in the preceding case, was somewhat irregular, ranging between 8 and 9 feet in diameter.

Near the center of this flooring, above which were no slabs or masses of rock, was the skeleton of a child.

But one part of this interesting mound was left unexplored, the outer, northern portion, where it is unlikely undisturbed burials would have been found.

On the Kimbrough Place, superficially, flint points were numerous, most of them probably knives, and showing little care in their manufacture. A few slender and graceful, triangular points of flint were found, however, the two basal angles projecting downward slightly. One rude arrowhead of quartz also was found.

MOUNDS ON THE WHEELOCK PLACE, RHEA COUNTY.

There are four small mounds on this place, the largest about 6 feet high and 50 feet in diameter, in sight from the landing. Owner, Mr. W. E. Wheelock, Chattanooga, Tenn. Permission not granted.

MOUNDS ON THE GARRISON PLACE, RHEA COUNTY.

Two mounds on this place, in full view from the river, each about 9 feet high (estimated), have been considerably dug into, resulting in the discovery of bones only, we were informed by the owner, Mr. J. E. Garrison, who lives on the place. We decided to make no investigation here.

¹ Gerard Fowke, "Archæological History of Ohio," p. 402, Fig. 128.

MOUNDS ON THE LOWER HAMPTON PLACE, RHEA COUNTY.

On the Lower Hampton Place, belonging to Mr. Walter Hampton, of North Chattanooga, extending for some distance along a ridge, as a rule, sometimes in pairs or in groups of three, some in woods, some in cultivated fields, are fifteen mounds, the largest, 9 feet in height and 65 feet in diameter. All these mounds are of the type common in this region, namely, the blunt cone.

One of these mounds, on the flat crest of a ridge, a short distance back from the river, about 30 feet from another mound, was 4 feet in height and 40 feet in diameter. A hole 12 feet square was put down, reaching at a depth of 40 inches a decaying skull with no trace of other bones.

About 4 feet 9 inches deep undisturbed red clay with pebbles was reached. The entire base was carefully searched without discovery of any burial or further trace of human remains.

MOUNDS AT EUCHEE, MEIGS COUNTY.

At Euchee are two mounds belonging to Mr. J. P. Celvahouse, of that place. These mounds, of the usual shape, estimated by our agent to be 12 feet and 4 feet high, with diameters of 75 feet and 50 feet, respectively, are used in time of high water to store goods upon, thus saving their transport to the hills; consequently, digging into the mounds was not desired.

MOUNDS ON THE UPPER HAMPTON PLACE, RHEA COUNTY.

On the Upper Hampton Place, belonging to Mr. Walter Hampton, a number of whose properties we have described in this report, are five mounds in an irregular line, but a few feet apart, none of which has been under cultivation. Taking these mounds in order, beginning with the most northerly one, the heights are: 6 feet 9 inches; 9 feet 8 inches; 15 feet 9 inches; 10 feet 2 inches; 6 feet 4 inches. The diameters of the circular bases of these mounds, taken in the same order as the heights, are: 55 feet; 60 feet; 85 feet; 55 feet; 50 feet. Numerous slabs, unquestionably from stone graves, lay upon one of them.

Selecting the smallest mound for investigation, a hole about 11 feet square reached the base-line at a depth of 4 feet 4 inches, showing that the mound had been increased in height, presumably by the washing away of adjacent ground, which could readily be the case, the mound being on a slope.

Not far from the center of the excavation, on the dark material marking the original surface of the ground, were remains of a skull, no other bones being present. With the skull was part of the columella of a conch-shell.

At one corner of the excavation were remnants, here and there, of bones which, from their position, indicated they had formed part of a skeleton lying at full length. Near the skull were two parts of the columella of a conch; two similar ones had been placed near where the left shoulder had been.

Extending over a number of acres along the river, at the Upper Hampton Place, is an aboriginal dwelling-site, now a cultivated field, having on the surface

considerable debris, including bits of pottery, some having crude, incised decoration of parallel and crossed lines.

There were gathered from the surface, besides some graceful, triangular arrowheads and many carelessly-made ones, all of flint: a hatchet and part of another one; small discs of pottery and of stone; a tubular bead and a small boss of brass; a flint knife. A very careful search conducted by nine persons failed to find any trace of human bones on the surface, and a limited amount of digging and sounding with the rod were unsuccessful in discovering burials.

MOUND NEAR RED CLOUD FERRY, RHEA COUNTY.

Near Red Cloud Ferry, on property belonging to Mr. William E. Wheelock, of Chattanooga, is a mound about 5 feet high and 40 feet in diameter (estimated). Permission not granted.

MOUNDS ON THE HOPE PLACE, RHEA COUNTY.

On the property of Mr. H. R. Hope are three mounds visible from the river, ranging between 7 and 9 feet in height, each about 50 feet in diameter (estimated). Though Mr. Hope kindly placed these mounds at our disposal, the low water prevailing in the river prevented our approach within a distance convenient for conducting the investigation.

MOUNDS ON THE CAGLE PLACE, RHEA COUNTY.

On the property of Mr. W. N. Cagle are three mounds, all between 5 and 6 feet in height and with basal diameters between 40 and 50 feet (estimated). Permission not granted.

MOUNDS NEAR JACKSON FERRY, MEIGS AND ROANE COUNTIES.

On the property of Dr. and Mrs. T. L. Smith, of Harriman, Tenn., are fourteen mounds, to investigate which we were unable to obtain permission. In ascending the river one comes first to a mound about 10 feet in height in sight from the bank. Farther along is one about 3 feet in height and opposite the mouth of White creek is another 5 feet high, approximately. These mounds probably are in Meigs County.

A short distance in from Jackson Ferry, on the Smith property, some of which are in sight from it, are five other mounds in line and but short distances apart, the largest having a height of about 5 feet.

Farther back on a hill, on the extremity of a ridge, in woods, is a very interesting group of six mounds, all near together, all very symmetrical and nearly of the same size, the largest being 16 feet in height and 80 feet in diameter.

MOUNDS ON THE FITZGERALD PLACE, ROANE COUNTY.

On the Fitzgerald property, belonging to Mrs. Elizabeth Fitzgerald, of Rockwood, Tenn., are seven mounds between 6 feet and 11 feet in height. Permission to dig not granted.

MOUNDS ON THE CAMPBELL PLACE, ROANE COUNTY.

On the property of Mr. E. F. Campbell, of Cleveland, Tenn., immediately opposite Half Moon Island, are six mounds a short distance back from the river, the smallest mound of the group immediately in from the landing, being 5 feet in height and 35 feet in diameter.

A short distance from this mound are four others, almost in a straight line and but a few yards apart, all very symmetrical, none showing previous digging



FIG. 98.—Mounds on the Campbell Place, Tenn.

or disturbance by the plow. These mounds are shown in Fig. 98. Their heights in order going eastwardly are 9 feet, 9 feet 4 inches, 8 feet 2 inches, 11 feet 3 inches; their diameters, 45 feet each, with the exception of the highest, which is 50 feet.

A short distance from these mounds, though not in line with them, is another, 11 feet 5 inches in height and 70 feet in diameter. A trench of considerable size, which we were informed had yielded only fragments of bones, had been put in from one side.

The mound nearest the landing, the one 5 feet in height, was selected by us for examination, and an excavation 12 feet square was put down by us through the base, which proved to be at a depth of slightly more than 4 feet. At 16, 20, and 22 inches down were decaying fragments of bone. On the base-line was a fragment of the petrous part of a temporal bone of a human skull.

MOUNDS NEAR ROCKWOOD LANDING, ROANE COUNTY.

On the property of Dr. Charles Wilson, of Rockwood, Tenn., are five mounds ranging between 4 and 9 feet in height (estimated). Permission not granted.

MOUND ON THE HOOD PLACE, ROANE COUNTY.

On property of Mr. T. L. Hood, in full view from the water, is a mound 11 feet in height and 55 feet in diameter (estimated), which, when visited by us

at the close of the season, was surrounded with growing grain. In view of the unproductive character of the mounds in this region, and the damage to property which the work would entail, we did not consider it worth while to investigate this mound.

MOUNDS ON THE BUTLER PLACE, ROANE COUNTY.

On the property of Mrs. Fanny Butler, of Harriman, Tenn., immediately across the river from the Ewing Place, next to be described, in sight from the water, are three mounds, two about 5 feet in height, one 3.5 feet high, approximately, having respective diameters of 50, 50, and 40 feet (estimated). These mounds at the time of our visit were covered with growing grain and were not investigated by us.

MOUNDS ON THE EWING PLACE, ROANE COUNTY.

On the property of Mr. R. E. Ewing, resident thereon, are six mounds in a cultivated field, a few yards from one another, none of which has been plowed over. The group is visible from the river. Someone, doubtless a victim of unrequited endeavor, had dug a large trench into one of the principal mounds before our coming, but otherwise no sign of previous disturbance was apparent in the group.

These mounds are in height, respectively: 12 feet 6 inches, 10 feet 9 inches, 10 feet 2 inches, 8 feet 5 inches, 7 feet, 5 feet 7 inches; the diameters being 65 feet, 55 feet, 65 feet by 55 feet, 50 feet, 50 feet, 45 feet.

A hole 12 feet square, sunk by us centrally in the smallest mound, came upon parts of a skeleton at a depth of 16 inches, so badly decayed that even the teeth crumbled when rolled between the thumb and fingers.

A distinct base-line was reached at a depth of 6 feet 3 inches, and on this dark stratum, in a corner of the excavation, were the remains of a skull in the last stage of decay, other bones perhaps having disappeared. With the skull was an asymmetrical banner-stone of sandstone, a rounded ellipse in outline, with the perforation so clumsily made that fragments of the stone were broken out at each extremity of it. At some distance from the skull was a rude arrow-head or knife, of flint.

On one side of the center of the excavation was a roughly circular grave between 5 feet 3 inches and 5 feet 10 inches in diameter, cutting through the base-line and extending 2 feet 3 inches below it, at the deepest part. The sides of the grave, however, sloped considerably, and it was only in the central part that the greatest depth was attained.

The pit had been dug into undisturbed red clay, and some of this clay had been piled around the opening, while more of it, mixed with dark soil which had been scraped from the surface and of which the mound was made, had been used to fill the grave. Careful search failed to discover any trace of skeletal remains in this pit, and as the soil in the bottom of it was very moist it is almost certain that a burial originally in the grave had decayed away.

MOUNDS ON THE TEDDER PLACE, ROANE COUNTY.

On property belonging to Mrs. Sarah Tedder who lives upon it, are three mounds a short distance apart, two on high land and visible from the river, one on sloping ground, a short distance farther back. The two mounds first mentioned, 10 feet and 9 feet 3 inches high, respectively, and each about 50 feet in diameter, are in a cultivated field, but themselves untouched by the plow.

The third mound, reduced by cultivation, is 4.5 feet high and 50 feet in diameter of base. Into this mound, centrally, a hole 12 feet square was sunk to the base resting on undisturbed clay. Somewhat away from the middle of the excavation was a skeleton extended on the back, not in a grave, apparently, but which seemingly had been placed upon the original surface of the ground and the mound erected over it. To the left of the skull were twelve musselshells (*Unio crassidens*).

MOUNDS ON THE DE ARMOND PLACE, ROANE COUNTY.

On property of the De Armond estate are three mounds in a cultivated field, on a ridge overlooking the river, from which they would be visible did not trees intervene. The mounds are 8 feet 3 inches, 4 feet 8 inches, and 3 feet 6 inches in height, and 50 feet, 45 feet, and 45 feet in diameter, respectively. The two smaller mounds have been under cultivation and have been much spread; the largest mound had trees upon it and seemingly was untouched by the plow.

In the central part of the smallest mound a hole 12 feet square was put down which came upon small deposits of musselshells, here and there, unconnected with burials. The mound proved to be of dark soil which seemingly had been gathered from a dwelling-site, though the surface of the surrounding area, at the present time, shows no sign of admixture with organic matter. Probably the soil of the midden site, long since loosened by the plow, has been washed away by rain.

Off toward one side of the excavation was a grave, extending 2 feet below the base of the mound, which was 3 feet 5 inches below its highest part. This grave-pit was distinctly marked, the dark soil of the mound extending into the red clay and gravel of the hills.

On the bottom of the grave was a skeleton extended on the back, much decayed. A small amount of charcoal lay beside it.

MOUNDS ON THE EVANS PLACE, ROANE COUNTY.

The Evans Place, on which is the terminus of a branch railroad which there transfers iron ore to a steamer, is under the management of Mr. J. W. Bowman. A short quarter of a mile in from the landing at this place are three mounds, two of which, 9 feet and 6 feet in height, respectively, and each 45 feet in diameter, have never been under cultivation and are filled with roots of trees, some of great size.

The third mound, which we selected for investigation, was 4 feet in height and 50 feet in diameter. It had been under cultivation for a long time. A hole 12 feet square came upon traces of a skull, 6 inches down, and reached the base-line of the mound at a depth of 3 feet.

Off toward one side of the hole were two burials which apparently had been laid on the original surface of the ground and the mound then had been built over them. These burials, which had been placed face to face in flexed positions, were traceable only through the presence of badly decayed bones of the legs and thighs in both instances, of the pelvis in one case, and of both skulls. No other bones were in evidence, and presumably they had decayed away. Near these mounds were remnants of several others almost plowed to the level of the field.

MOUNDS NEAR HOOD'S FERRY, ROANE COUNTY.

On property of Mr. R. H. Alford, who lives on it, are four mounds and several remnants of mounds, in sight from Hood's Ferry and from one another. These mounds, which have all been under cultivation, are: 10 feet high, 55 feet in diameter; 4 feet in height, 65 feet in diameter; 12.5 feet high and 50 by 75 feet in diameter; 6 feet 8 inches in height and 65 feet in diameter.

The mound last mentioned was selected by us for investigation, with the feeling on our part that it was as likely as any of the others to demonstrate how little of an imperishable nature was put with the dead by the aborigines of this region. The usual excavation, 12 feet square, was put down centrally in the mound and showed it to be composed of the brown clay mixed with sand, of the bottom-land on which it was, and proved also that the height taken from the outside, namely 6 feet 8 inches, was misleading, as the sloping ground on which the mound was reared had been exposed to wash which had hollowed out the ground immediately around it. A dark line marking the base was reached at a depth of 4 feet 8 inches. This line, however, was not apparent at one corner of the excavation, though careful digging failed to discover a pit.

Lying on the base of the mound to one side of the center of the excavation, was a small deposit of calcined fragments of human bone. Above them the ground was soft to a height of about one foot, but no pit could be determined, as the material covering the bones was of the same color as that of the rest of the mound.

About three-quarters of a mile back from the river, also on Mr. Alford's property, are four other mounds near together, which were visited by our agent. We were informed that these mounds were about the same size as those already described on this place.

MOUNDS ON THE GOODWIN PLACE, ROANE COUNTY.

On property belonging to Mr. R. E. Ewing are three mounds, 9 feet, 6 feet, and 5 feet in height; and 50 feet, 40 feet, and 35 feet in diameter, respectively. Owing to a misunderstanding as to the nature of our expedition, permission to

explore these mounds was not granted by Mr. Ewing, who was consulted by telephone. Later, when we called on Mr. Ewing, another place owned by him was cordially put at our disposal.

MOUNDS ON THE BISS PLACE, ROANE COUNTY.

On the property of Mr. Henry D. Biss, who resides on it, are three mounds. Two of these, about 60 yards apart, on high ground, are visible from the river, the larger, which has an extensive hole in the center, left by a previous digger, being 11.5 feet in height and 60 feet in diameter, and having, like nearly all the mounds of this region, an almost circular base.

The smaller mound, between 3 and 4 feet in height, and 45 feet in diameter, is on a slope.

An excavation 12 feet square was put down in the smaller mound, reaching undisturbed clay at a depth of 3 feet 7 inches. Just beneath the surface were remains of a skull and fragments of other bones. An arrowhead of flint was found isolated in the clay.

At a depth of 2 feet 5 inches was the skeleton of an adolescent, partly flexed to the left, without the skull. While the bones of this skeleton were badly decayed and friable, they were distinct, so that it was clear that the skull was not missing through decay. No sign of disturbance, aboriginal or recent, was noticeable near the skeleton, which apparently had been interred without the cranium.

At the right shoulder was a small, triangular arrowhead of flint, and four of the same material and shape were at the left shoulder, a particularly graceful one being 1.7 inch in length and .65 inch across the base. On the pelvis was part of the columella of a conch-shell, much decayed.

A most careful search failed to reveal any sign of a burial below the base of the mound.

We obtained from Mr. Biss, who informed us he had plowed it from this mound, an object of coarse-grained diabase, 6.6 inches in length, 3 inches in maximum width, 1.1 inch wide at the narrow end, 2.75 inches at the opposite end, and .3 inch in maximum thickness (Plate VII, Fig. 2). In shape this object much resembles a ceremonial axe, which we believe it to be and that it was carried attached to a handle, as the perforation is placed in a position in the blade similar to that found in numerous unquestioned ceremonial axes. The absence of a cutting edge in the specimen under consideration does not, in our opinion, seem incongruous in the case of an axe intended only for ceremonial use.

An object of like material, and otherwise similar, save that it is somewhat smaller, is in the Vaux collection at the Academy of Natural Sciences of Philadelphia and is reported to have come from West Virginia.

In a description of the Mason collection in the American Museum of Natural History, New York, is figured¹ another of these ceremonial axes (according to

¹ Alanson Skinner in "The American Museum Journal," April, 1914.

our belief) which the author classes among pendants. This axe or pendant, as the case may be, resembles ours (again even as to material), but in addition has certain notches at one end. Its size is not given. The Mason collection is said to be composed of objects from the vicinity of Jonesboro, Tenn., which is in the northeastern corner of that state.

In an interesting paper¹ Dr. A. C. Simoens da Silva figures one of these ceremonial objects which he describes as "a stone axe without a cutting edge" and calls it "the insignia of an Indian chief." This axe, he tells us, is a fine-grained diabase and was found in southern Brazil. He believes it was worn suspended from the neck.

On the Biss Place also is a remnant of a mound which had been considerably dug into previous to our coming and was not examined by us.

MOUNDS ON LONG ISLAND, ROANE COUNTY.

On Long Island, which is about 3 miles in length and is owned by Messrs. Gorda Johnson Sons, of Lookout Mountain, Tenn., is a mound about 18 feet in height, and a considerable number of small mounds, none, we believe, having an altitude of more than 7 feet. Permission was refused.

The large site on Long Island was in part investigated on behalf of the Bureau of American Ethnology,² resulting in the discovery of an interesting stone image which is figured in the report. Long Island, as we have explained, is in a part of Tennessee river formerly called Holston river, and it is so spoken of in the account.

The statement made (page 359) that the large mound on Long Island was known as the Brakebill Mound and was explored by the Rev. E. O. Dunning on behalf of Peabody Museum of Cambridge, Mass., is an error. The Brakebill Mound³ is near the junction of the Holston and French Broad rivers, just above Knoxville, Tenn.

MOUNDS NEAR HUFFINE FERRY, ROANE COUNTY.

About 400 yards in a southerly direction from Huffine Ferry and in full view from the river is a mound on cultivated land belonging to Mr. B. F. Huffine who resides nearby. The mound, which has been plowed over for a long time, is on a slope, and presumably the ground around it has been washed away, as its height, 4.5 feet as measured from the outside, proved to be considerably less when our excavation, 12 feet square, was carried centrally to the base. The diameter of the mound was 40 feet.

Near the surface was part of the shaft of a human femur. At a depth of

¹ "Points of Contact of the Prehistoric Civilization of Brazil and Argentina with those of the Pacific Coast Countries." Proceedings of the International Congress of Americanists, XVIII Session, Part II. London, 1912.

² Twelfth An. Rep., p. 358 *et seq.*

³ Fifth An. Rep. Peabody Museum, p. 11.

26 inches a dark line was reached, presumably the original surface of the ground, beneath which was the undisturbed red clay of the hills.

In the eastern side of the excavation was a grave in the form of an irregular circle with diameters of 5 feet 10 inches and 6 feet 6 inches. This pit apparently had been dug to a depth of 2 feet below the base of the mound and was clearly defined, extending into the red clay.

On the bottom of the grave was a skeleton partly flexed on the left side, with charcoal under it and along it in places. The grave, which was concave, resembling a large basin, had been partly filled with the red clay that had been dug out in its making and which also was piled around the margin of the grave. The red clay that had been used to fill was easily distinguishable from the clay of the same color of the solid ground surrounding it, as it was much less compact than was the undisturbed clay. Evidently the mound had been built largely from the brown material taken from the surface, and this material had been used to complete the filling of the grave.

About one-half mile SSE. from the mound just described, also on the property of Mr. Huffine, is another, somewhat smaller, which we decided not to investigate.

MOUND ON THE PICKLES PLACE, ROANE COUNTY.

On the property of Mr. J. E. Pickles is a mound 40 feet in diameter and 5 feet high (estimated). Permission not granted.

MOUNDS NEAR PAINT ROCK CREEK, ROANE COUNTY.

One-half mile S. by E. from the mouth of Paint Rock creek, in a cultivated field belonging to Mrs. J. H. Byrd, of Loudon, Tenn., is a mound about 9 feet high and 75 feet in diameter (estimated). This mound, though kindly placed at our disposal by Mrs. Byrd, was covered with growing grain at the time of our visit and was not dug into by us.

On the property of Mr. R. H. Bell, on the lower side of Paint Rock creek, are seven mounds: one 3.5 feet, three 5 feet each, one 10 feet, one 12 feet, one 22 feet in height (estimated). The two largest mounds have flat tops; on the smallest is a building. Permission refused.

In the Third Annual Report of the Bureau of American Ethnology (page 461) is an account of these mounds near Paint Rock Ferry, which is near the mouth of Paint Rock creek. The height of the largest mound is given as 40 feet, a great over-estimate. In a mound at this place, according to the investigator for the Bureau, a stone grave (not of the box-shape) was found and stone slabs lay on the surface.

MOUNDS NEAR MOUTH OF POND CREEK, LOUDON COUNTY.

About one-quarter mile W. by S. from the mouth of Pond creek, and in sight from it, is a mound in a cultivated field, the mound also having been plowed over. Mr. F. A. Berry, the owner of the property, who resides on it, informed

us that while the field had long been under cultivation, the mound had only recently been cleared of trees and, so far as he knew, it had not been dug into to any extent. This absence of wear and wash doubtless explains the symmetry of the mound, which, though 10.5 feet in height, was only about 60 feet in diameter, its shape being the usual blunt cone found in this region.

A few feet from this mound is what the plow has left of another one, the height of this remnant being about 2 feet, the diameter about 45 feet. As this remainder had been dug into considerably before our visit, it was not investigated by us.

On that part of the field which surrounds these mounds, considerable midden-debris, seemingly free from any objects of interest, is scattered.

In the larger mound a hole 12 feet square was put down to and through the base, which, in the shape of a dark, irregular streak about one inch in thickness, was encountered at a depth of 12 feet.

Throughout the digging human remains were ten times encountered at depths between 16 inches and 10 feet 7 inches, the upper burials being in a far poorer condition through decay than were the lower ones, presumably because the upper part of the mound (which was of clay from the bottom-land on which the mound stood) was damp, while the ultimate three or four feet were perfectly dry at the time of our visit. While it is likely that in the rainy season the whole mound may be affected by moisture, the lower part is dry for a much longer period each year than is the upper portion.

The burials in order of depth were as follows: a bunched burial with bones belonging to at least four persons, having in association a canine tooth of a large carnivore, too much decayed to determine if it had been perforated or grooved for suspension, and parts of two columellæ of conch-shells; a skull having the lower jaw much decayed; traces of a tibia and a femur; remains of a skull; remnants of bones of two legs flexed; fragments of a skull; a skeleton partly flexed on the left side; one partly flexed on the right side; one closely flexed on the right side, having with it a small quantity of ashes and charcoal; a skeleton at full length on the back, having near the skull a small, triangular arrowhead of flint, with the line of the base concave.

No grave-pits were apparent in the body of the mound.

In one corner of the excavation was a pit, roughly circular, about 33 inches in diameter, tapering considerably toward its base, which was 14 feet from the summit of the mound. This pit, which clearly cut through the dark line of the base of the mound and two feet beyond, was not determinable as to where it commenced in the mound. Probably it had been started from the original surface of the ground, and after it had been filled the mound was built over it.

In the bottom of the pit and around the sides of the lower part were masses of very hard clay, or possibly claystone which had deteriorated since the time of its burial. Enclosed by these masses was granular soil easily removed with a trowel, while to loosen the clay in that part of the mound which surrounded the pit the use of a pick was necessary. This granular earth extended about 10

inches above the base-line of the mound, and probably was what was left when the pit was filled. Over this little mound, to the height of about a foot, was dark clay resembling that found on the surrounding field. This clay probably had been gathered from the level ground and piled above the small mound as a nucleus for the greater one. Above this dark clay was a deposit of thirty or forty musselshells, much decayed.

Although great care was exercised in the removal of the contents of the pit, no trace of human remains was discovered. If the pit had served as a place of burial, the remains that had been interred in it had decayed away. Presumably the pit below the base of the mound, into which water probably could percolate from the general level of the field, would contain more moisture than would lower parts of the mound above it.

MOUND NEAR CAVE CREEK, ROANE COUNTY.

A mound about one-quarter mile due N. from the mouth of Cave creek, in a cultivated field, on property of Mr. Robert Dowdy, 4 feet in height and 40 feet in diameter (estimated). Permission not granted.

MOUND ON THE E. E. BLAIR PLACE, LOUDON COUNTY.

About one-half mile in from the river, on the property of Mr. E. E. Blair, living in the vicinity, in a cultivated field, is part of a mound now nearly plowed away. We did not consider this remnant worthy of investigation.

MOUND ON THE W. W. BLAIR PLACE, LOUDON COUNTY.

On the property of Mr. W. W. Blair, who lives upon it, about one mile below the town of Loudon but on the opposite side of the river, is a mound one-half mile from the landing in a cultivated field and in view from the road. The mound 4 feet in height and 45 feet in diameter of base, which we were told had been plowed over for years, showed no evidence of previous digging, though the presence of musselshells upon it, while none are on the surrounding field, indicated that digging had been done or that parts of the mound had been plowed away.

Later an excavation 12 feet square showed that a trench about 4 feet wide had been dug in from the western side of the mound, and, extending below its base, had reached its central part. Evidently this trench had been filled in during the cultivation of the mound.

Human remains, all very badly decayed, were encountered as follows: fragments of bones disturbed by the plow; a skull 10 inches down; remains of a skeleton at a depth of 14 inches, which apparently had been partly flexed to the left; remains of bones indicating a burial partly flexed to the right, 28 inches deep; remnants of the skeleton of a child, 3 feet 8 inches below the surface; fragments of bone in the former digging and other fragments in the mound near the trench, 3 feet 10 inches deep.

The mound was composed of the red earth of the hills to a depth of 3 feet 3 inches, below which, for somewhat more than one foot, was what seemed to be brown soil gathered from the adjacent surface. Below this was undisturbed red clay.

On this undisturbed clay, 4 feet 5 inches down, was a skull which may have been interred alone, or, as it lay near the trench, it may have been all that had not been cut away by the previous digging.

Throughout our investigation of this mound the only artifact found was a small, flint arrowhead.

MOUND OPPOSITE LOUDON, LOUDON COUNTY.

On property of Mr. Walter Blair, opposite the town of Loudon, at the foot of the hills, about one-quarter mile in from the river, is a mound 5 feet in height and 40 feet in diameter (estimated), a large part of which has been dug out. Permission to investigate this was not urged by us.

MOUND ON THE CARMICHAEL PLACE, LOUDON COUNTY.

On a low hill about one-quarter mile in from the river, and in sight from it, is a mound slightly more than 3 feet in height and 36 feet in diameter, on property belonging to Mr. N. B. Carmichael, who resides upon it.

The mound was composed largely of the red clay of the hills, which is reached a few inches below the general surface, but the upper clay having lost part of its iron through the growth of vegetation, had assumed a brown or yellow appearance. This superficial layer made it easy to determine when the base of the mound, the original surface of the ground, had been reached, and the red clay beneath it made the determination of intruding yellow or brown clay in pits also an easy matter.

An excavation 12 feet square came upon, at a depth of 14 inches, a skull face down, and some small decaying fragments of bone, among which were recognized part of a humerus and small remnants of a forearm.

The base of the mound was reached at a depth of 2 feet 4 inches. Somewhat off from the center of the base was a pit, 4 feet 10 inches by 4 feet 2 inches, extending 1 foot 2 inches below the original surface, or base of the mound. On the bottom of the pit a skeleton, hardly more than traceable, lay partly flexed to the left, the head W. by S. The pit evidently had been filled prior to the building of the mound, as the mixed material in it differed from the composition of the mound in the neighborhood of the grave. In addition, the material filling the grave had been made into a little mound 10 inches in height above the grave, over which the mound proper had been built.

Another pit, 4 feet 11 inches by 2 feet 8 inches, also was somewhat away from the center of the base. Its depth below the original surface of the ground was 10 inches. In it lay faint traces of a skeleton partly flexed to the right, the head SSE.

MOUNDS ON THE ARTHUR PLACE, LOUDON COUNTY.

On cultivated ground belonging to Mr. Felix Arthur, whose home is near by, are four mounds, all in sight from the bank of the river, the largest 5 feet 8 inches in height and 55 feet in diameter. Three of these mounds are in line and but a few feet apart. The fourth, about 200 feet away, is at a right angle from the middle mound of the three. Trees of considerable size on all the mounds give evidence that they have not been under cultivation in recent years; indeed, judging from their appearance, they have never been plowed.

The mound chosen for investigation (the one at a distance from the rest) was 5 feet 6 inches in height and 40 feet in diameter. A hole 12 feet square, dug into the central part, reached a decaying skull and some small fragments of bone, about 22 inches down.

In another part of the excavation, at a depth of 16 inches, were traces of bone and teeth of a child, with which were a few shell beads, and some marine shells (*Olivella mutica*) pierced for use as beads.

Twenty-six inches down were a skull and some traces of other bones indicating a flexed burial. A small, flat fragment of limestone lay on the lower part of the trunk.

Apart from bones were: a graceful arrowhead of flint, triangular, with the two basal extremities projecting downward somewhat; two spherical pebbles and one somewhat resembling a diminutive brick in shape, together.

When the excavation had reached a depth of about 5 feet, heavy and prolonged rain induced us to abandon work additional to the filling of the excavation.

MOUND NEAR LENOIR CITY, LOUDON COUNTY.

About one-half mile northwest from Lenoir City Landing is a mound about 5 feet high and 40 feet in diameter (estimated), on property of the Lenoir City Company. Permission not granted.

MOUNDS OPPOSITE LENOIR CITY, LOUDON COUNTY.

About one mile east of the ferry landing opposite Lenoir City, where Little Tennessee river enters the Tennessee, on the farm of Mr. J. W. Bussell, are five mounds, the largest about 6 feet high and 50 feet in diameter (estimated). Permission refused.

The mounds on both sides of Tennessee river, near Lenoir City, are described and mapped in the Twelfth Annual Report of the Bureau of American Ethnology (page 397 *et seq.*).

MOUNDS ON THE EDWARD PRATER PLACE, BLOUNT COUNTY.

In a cultivated field, on high land rising from the river-bank, belonging to Mr. Edward Prater, who lives somewhat farther back in the country, are two mounds but a few feet apart, one of which, about 18 inches in height, seemed to have been thoroughly dug.

The other, though it had been under cultivation, showed no sign of digging. Its height was about 2 feet; its diameter, about 45 feet. Four large trial-holes in the central part of the mound showed the base to be about 2 feet 9 inches down, and in one instance came upon a skeleton flexed to the right, at a depth of 20 inches.

At the left of the skull was a small, complete, quartz crystal. Though bearing no perforation or groove for suspension, this crystal, perhaps, had been an ornament, or possibly a part of the paraphernalia of a medicine-man. Small wonder that quartz crystals, with their striking and mysterious appearance, should appeal to the savage mind as efficacious in the practice of "medicine" or magic. Fragments of quartz crystals are found in the bags carried by sorcerers in Roro, New Guinea.¹ The medicine-men of the Papago Indians² of Arizona use crystals to induce rain, and they form part of the equipment of the priests of the Pueblo Indians of New Mexico and Arizona today as of old. We found many large quartz crystals in the mound at the Haley Place,³ southwestern Arkansas, interred evidently with important persons. All recall the bit of quartz crystal in the Natchez temple, and doubtless many other examples of the use of crystals by aborigines are familiar to most of us.

In the field near the mound is a small dwelling-site having a few shells and other debris scattered upon it. Apparently much of it had been washed away. No burials were encountered.

DWELLING-SITES ON THE S. E. PRATER PLACE, BLOUNT COUNTY.

Adjoining the Edward Prater Place is the property of Mr. S. E. Prater, living some distance back toward the hills. Two dwelling-sites on this place were covered with growing grain, and as the region was so unpromising no effort was made on our part to arrange terms for an investigation.

DWELLING-SITE ON GRANT ISLAND, BLOUNT COUNTY.

On Grant Island is a dwelling-site, to investigate which we were unable to obtain permission. Owner, Mr. John Queener.

DWELLING-SITE ON COX ISLAND, KNOX COUNTY.

Cox Island, whose area is restricted, belongs to Mr. W. L. Hinson, living nearby on the mainland. On part of this island is an aboriginal dwelling-site covered with pebbles, broken and whole, some of fair size; hammer-stones; some shells; a small number of bits of pottery, and here and there fragments of human bones. The pebbles at this place are silicious, but flint is practically absent.

From the surface were gathered an arrowhead of flint, a rude grooved axe of sandstone, a spade of like material, and part of a slate gorget.

¹ Robert W. Williamson, M. Sc., F.R.A.I., "The Ways of the South Sea Savage," p. 160.

² Dr. Carl Lumholtz, "New Trails in Mexico," p. 49.

³ C. B. Moore, "Some Aboriginal Sites on Red River," Journ. Acad. Nat. Sci. Phila., Vol. XIV, p. 527 *et seq.*

Considerable digging resulted in the discovery of the skeleton of a child at a depth of one foot, and showed that most of the midden material formerly on the site had been washed away.

DWELLING-SITE ON PRATER ISLAND, KNOX COUNTY.

Prater Island, belonging to Mrs. Frank Maxey, of Maryville, Tenn., has a well-defined dwelling-site near its lower extremity, on which were fragments of shells, some scattered pebbles, and bits of human bone. From the surface were collected a handsome barrel-shaped bead of shell, nearly one inch in length; part of a slate gorget; three flint arrowheads; a small discoidal stone.

Numerous trial-holes came upon a skeleton closely flexed, face down, 10 inches from the surface, another partly flexed on the left. A grooved axe¹ of fine-grained gneiss, about 8 inches long, was unearthed one foot below the surface, apart from any burial.

Also in this site was a refuse pit, 4 feet 2 inches by 3 feet 10 inches at the top, which was 7 inches below the present surface of the field. The pit tapered inward somewhat in the upper part, and then continued down with the sides more nearly perpendicular. The depth of the pit from the surface was 5 feet, its original depth probably having been 7 inches less.

This pit, which had no burial in connection with it, was filled with refuse material, including some river shells from which the following were sufficiently preserved to identify: *Unio crassidens*, *Dromus dromus*, *Quadrula pyramidata*, *Q. ebena*. There was also much soil, almost black with admixture of organic matter, in the lower part, with a few shells, most of the shells with some of the dark earth being in the upper part.

MOUND AND SITE ON THE JACKSON PLACE, BLOUNT COUNTY.

On the lower part of the property of Mr. A. N. Jackson, who resides on it, is a small, aboriginal site not far from the river, in which we were unable to find bones or artifacts. From the surface were gathered one flint arrowhead and a graceful celt of ferruginous shale, having, however, no cutting edge.

Near the landing on the same place, which is about one mile farther up the river, is a mound in a cultivated field, which would be visible from the landing were it of greater height. Careful digging into this small elevation, which was but one foot above the surface, with a diameter of 35 feet, yielded only scattered fragments of human bones.

DWELLING-SITE NEAR LITTLE RIVER SHOALS, KNOX COUNTY.

At the upper end of Little River Shoals is the property of Mr. R. A. Sharp, who resides upon it. In sight from the landing at this place, in a pasture, is an

¹ Strange as it may seem, considering the amount of digging we have done, this grooved axe, the one from Cox Island, just below, and one from the site near Milton Bluff, Lawrence Co. Ala., are the first we have found beneath or on the surface in the course of our archæological investigations.

aboriginal dwelling-site whose dark soil, filled with organic matter, shows it to have been a place of aboriginal abode for a long time. On the surface were scattered shells and numerous fragments of human bones. The place has a history of many skeletons plowed up there.

From the surface were gathered: a small discoidal stone; a flat pebble rounded by chipping; a number of arrowheads and knives of flint, and one of quartz; a slate gorget, elliptical in outline, the two "perforations" of which had not been completed. Owing to a natural desire on the part of the owner that his rich pasture land should not be extensively dug into, it was arranged that four trial-holes should be put down to serve as an indication of the contents of the site.

In two of these holes were fragments of human bones, too deep for the plow to have disturbed and presumably scattered in aboriginal times. In another hole, about 20 inches deep, lay a skeleton flexed to the left, the arms folded across the lower part of the trunk. On both forearms were many small, discoidal shell beads of great uniformity of size, each being about .12 of an inch in diameter. So minute are these beads that, beyond doubt, a number were lost in the soil; 2,997, however, were recovered, including twelve somewhat broken.

MOUND OPPOSITE LOONEY ISLAND, KNOX COUNTY.

Opposite the lower end of Looney Island is a property belonging to Dr. B. D. Brabson, of Knoxville, Tenn. In sight from the landing on this property is a mound somewhat less than 7 feet in height, and 60 feet in diameter of base. This mound had been dug out centrally and extensively trenched from two sides, and perhaps otherwise explored. In view of all this digging an investigation of the mound was deemed inexpedient.

MOUND NEAR KNOXVILLE.

About one mile below the city of Knoxville, on the grounds of the College of Agriculture and Experiment Station, University of Tennessee, is a mound 10 feet in height and 75 feet in diameter (estimated). As there was a laudable desire on the part of the management of the college to protect the trees growing on this mound, permission to dig into it was not granted.

INDEX

- Adze form of celt, 384
Agricultural implements, 190, 204, 206, 243, 245, 253, 255, 256, 259, 273, 281, 299, 314, 318, 337, 397, 420
Amulet of bar variety, made from hematite, 318
Amulets of bar variety, 318, 337
Anglesite, lead sulphide, possibly used as paint, 301
Anklet of brass, 283
Antler, worked, 270, 384
Anvil-stone, 260, 279, 281, 404
Archæological investigation, no previous systematic, of Tennessee river, 178
Archæological work previously done along Tennessee river, 180
Archæology of northern Alabama previously unknown, 180
Armlets of brass, 364, 366
Armstrong Ferry, mounds near, 396
Arrow flakers of antler, 318, 323
Arrowhead of unusual shape, 251
Arrowheads and fragments of flint bought by dealer, 397
Arrowheads, deposit of, with burial, 383
Arrowheads of flint showing secondary work, 230, 275
Arthur Place, mounds on, 419
Axe with double groove, 259
Axes, ceremonial, of copper, 403, 404
Axes, ceremonial, of stone, 284, 303, 305, 318, 349, 351, 376, 413, 414
Axes, grooved, 259, 404, 420, 421
Banner-stone, 252, 410
Bar-amulets, 318, 337
Baroque pearls, pierced for stringing, 267
Barrel-shaped stones, 260, 279
Barrett Ferry, mound near, 189
Baugh's Landing, dwelling-site at, 234
Bead, large, of copper, 247
Bead of stone, 317
Beads, discoidal, of shell, of large size, 392
Beads of bone, 343, 355, 363, 384, 386, 387
Beads of brass, 363, 408
Beads of copper, 247, 248, 250, 273, 291, 296, 297, 299, 300, 336, 355, 382
Beads of glass, 283, 295, 305, 307, 363, 365, 366, 367, 373, 384, 396
Beads of shell, 205, 206, 207, 209, 234, 238, 245, 262, 263, 267, 268, 273, 274, 292, 293, 305, 306, 307, 309, 315, 316, 330, 336, 342, 345, 346, 347, 350, 359, 361, 372, 374, 378, 380, 381, 382, 383, 384, 386, 390, 392, 419, 421, 422
Beads of shell, large number in one deposit, 422
Beads of shell, long, 307, 361
Beads of shell, *Marginella*, 205, 306, 316, 317, 355, 375, 380, 383, 391, 419
Bean Rock, dwelling-site near, 279
Bear, black, jaw of, 308, 351, 355
Beech creek, dwelling-site near mouth of, 206
Bell Place, mound on, 387
Bennett Place, mounds on, 338
Bicave of earthenware, 387
Bicave of quartz, with central perforation, 404
Bicave stones, 190, 262, 318, 386, 404
Bison, jaw of, 368
Biss Place, mounds on, 413
Blair, E. E., Place, mound on, 417
Blair, W. W., Place, mound on, 417
Bone beads, 343, 355, 363, 384, 386, 387
Bone needle with eye, 279
Bone object, copper coated, 187
Bone piercing implements, 204, 210, 227, 270, 279, 281, 286, 305, 323, 324, 356, 387, 389, 397
Bone pins, 328, 345
Bone tube, 386
Boss of impure silver, 308
Bosses of brass, 365, 408
Bosses of copper, 331, 363
Bottle, pottery, with handles, 241
Bottles, large, with burials, 347, 349
Bowl, soapstone, 242
Boyd's Landing, mound near, 230
Bracelet of brass, 367
Bracelets of copper, 292
Bracelets of iron, 308, 364
Brain preserved in skull, 350
Brass, 283, 363, 364, 365, 366, 367, 368, 396, 408
Bridgeport, or Long, Island, mounds and dwelling-site on, 331
Brown's Ferry, dwelling-site at, 259
Brown's Island, mound on, 259
Burgess, Major H., 176, 184
Burial, certain forms of aboriginal, 182
Burial having above it bones of lower animals, 376
Burial in sitting position rare, 183
Burials are of adults when not otherwise described, 183, 342
Burials closely flexed and almost vertically placed, 328, 362, 363
Burial, deposited above charcoal or bark, 202
Burials in stone mound, 197, 198
Burials, marginal placement in domiciliary mounds, 217, 233
Burials, measurement of depth of, 183
Burials partly enclosed in sand, 204, 249, 292, 296, 300, 336
Burials with layer of pure clay, 202, 245, 246, 247, 248, 249, 273, 274, 275, 276, 277, 300, 301
Burials with masses of fine clay, 245, 246, 247, 250, 251, 273, 274, 275, 277, 293, 299, 300, 301, 302

- Burial, unusual form of, 250
 Burned wattle and daub structures, 315, 341, 362
 Burns Island, dwelling-site on, 335
 Bushnell, Jr. David I., 172
Busycon, conch-shell used by aborigines, . . 184
 Butler Place, mounds on, 410
- Cadle, Col. Cornelius, 225
 Cagle Place, mounds on, 408
 Campbell Place, mounds on, 409
 Cane creek, dwelling-site near, 250
 Carbonate of lime, small masses of, 262, 284, 291, 296
 Carmichael Place, mound on, 418
 Carter Farm, mounds on, 358
 Cataco creek, dwelling-site near, 276
 Cave creek, mound near, 417
 Cedar creek, mounds opposite mouth of, . . 205
 Cedar, slabs of, on burial, 376
 Celt, adz-form of, 384
 Celt grooved on its narrower sides, 368
 Celt, showing handle attachment, 373
 Celts of copper, 247, 276, 277, 291, 295, 296, 302
 Celts of iron, obtained from the Whites, 373, 374
 Celts of iron or of steel, 306, 363, 373, 376, 386
 Celts with handle in place, 346
 Celts without cutting edge, 389, 400, 421
 Cemeteries, aboriginal, none of large size bordering Tennessee river, 177
 Ceremonial axes of copper, 403, 404
 Ceremonial axes of stone, 284, 303, 305, 318, 349, 351, 376, 413, 414
 Ceremonial axes without cutting edge, 413, 414
 Ceremonials, reel-shaped, of copper, 245, 246, 247, 277, 278, 291, 292, 295, 296, 299, 300, 301
 Ceremonials, reel-shaped, of copper, data as to, 245, 246, 277
 Charcoal with burials, 202, 308, 399, 402, 411, 416
 Chattanooga Island, dwelling-site on, . . . 369
 Check-stamp decoration on pottery, 242, 272, 279, 314, 335
 Chisel of flint, with ground cutting edge at each end, 208
 Chunn's Landing, mound and dwelling-site above, 278
 Citico mound and site, 180, 370
 Claw represented in wood, copper coated, . . 187
 Clay, deposits of, with burials, 245, 246, 247, 248, 249, 250, 251, 273, 274, 275, 276, 277, 293, 299, 300, 301, 302
 Clay, hot, extensive use of, with burials, 338, 340, 341, 342, 382
 Clay, layer of, with burials, 202, 245, 246, 247, 248, 249, 273, 274, 275, 276, 277, 300, 301
 Clay reddened by heat, above burials, 314, 315, 318, 340, 355, 362, 367, 368, 382
 Colbert creek, dwelling-sites near, 240
 Columellæ of conchs, sectioned, 274, 391
 Columellæ of conchs used as ear-ornaments, 315
 Columellæ of conchs with burials, 407, 413, 416
 Complicated stamp decoration on pottery, . . 281, 318
 Conch shell drinking cup, "killed," 243
 Conch shells with burial, 197, 245, 249, 250, 268, 291, 301, 388
 Cone of sheet-copper, 305
 Cook Landing, mounds near, 399
 Cope, E. D., 237
 Copper beads, 247, 248, 250, 273, 291, 296, 297, 299, 300, 336, 355, 382
 Copper bracelets, 292
 Copper celts, 247, 276, 277, 291, 295, 296, 302
 Copper-coated claw of wood, 187
 Copper-coated disc of wood, 270
 Copper-coated object of bone, 187
 Copper-coated ornaments of wood, 263, 264, 265, 343
 Copper-coated ornaments of wood, Mr. C. C. Willoughby as to, 263, 343
 Copper-coated pendant of indurated clay, . . 187
 Copper, discs of, 318, 331, 363, 367, 384
 Copper ornaments, reel-shaped, 245, 246, 247, 277, 291, 292, 295
 Copper, sheet-, ornament of, on skull, 287, 289, 342
 Copper, sheet-, ornament of, representing an eagle, 342
 Copper spool-shaped ear-ornaments, 245, 255, 277, 301
 Copper, twisted strip of, 297
 Counterfeiting of flints, 175, 181
 Cowry shells used in trade by the Hudson's Bay Company, 294, 295
 Cowry shells with burial, 293, 294
 Cowry shells with burial, Dr. W. H. Dall as to, 294
 Cox Island, dwelling-site on, 420
 Cox mound and dwelling-site, 314
 Cremation, 203, 280, 326, 330, 340, 341, 382, 383, 412
 Cremation by hot clay, 203, 340, 341, 342, 382
 Cremation by hot clay on slabs of stone, . . 203
 Cube of galena, artificially shaped, 387
 Curtis, E., 171, 178
- Dall, Dr. W. H., 294
 Davis Place, dwelling-site on, 392
 De Armond Place, mounds on, 411
 Decatur, mound at, 270
 Decoration, painted, of unusual form, on vessels, 345, 348
 Deposit of arrowpoints with burial, 383
 Deposit of celts with burial, 384
 Deposit of implements and fragments of chert with burial, 305
 Dickey's Landing, mound near, 220
 Disc of sandstone with line decoration, . . . 355
 Disc of wood, copper coated, 270
 Discoidal, rude, of galena, 240, 299
 Discoidals, stone, 208, 269, 270, 284, 295, 305, 351, 375, 380, 383, 386, 387, 421, 422
 Discs of brass, 363, 366, 367, 368
 Discs of copper, 318, 331, 363, 367, 384
 Discs of pottery, 190, 234, 355, 377, 380, 387, 400, 408
 Discs of shell, 300, 307, 346, 351, 355
 Discs of stone, 383, 400, 408
 Dixie Landing, mounds and dwelling-site near, 200

- Dogs, 237, 270, 275
 Drills of flint, 278, 308, 392
 Drum-fish, teeth of, in rattles, . . . 374, 377
 Dunning, Rev. E. O., 171
- Ear-ornament of antler, 323
 Ear-ornaments of wood, copper-coated, in
 form of milkweed pod, 263, 264, 265
 Ear-ornaments, pin-shaped, remarks as to, 262
 Ear-ornaments, spool-shaped, of copper, 245,
 255, 277, 301
 Ear-plug, spool-shaped, of shell, 383
 Ear-plugs of shell, 261, 263, 306, 355, 373, 374,
 376, 378, 384
 Ear-plugs of shell, "bracket" shape, 372, 382,
 384
 Earthenware bottle of graceful shape, . . 271
 Earthenware discs, 190, 234, 355, 377, 380, 387,
 400, 408
 Earthenware vessel, double "spouted," . . 237
 Effigy of human head, earthenware, . . 190
 Eldridge Place, mound and site on, . . . 393
 Ellis creek, mound near, 187
 Elk antler, tool made from, 337
 Euchee, mounds at, 407
 Evans Place, mounds on, 411
 Ewing Place, mounds on, 410
- Fewkes, Dr. J. Walter, 348
 Fire, ceremonial use of, with burials, 203, 314,
 315, 338, 340, 341, 355, 362, 367, 368, 382,
 399
 Fire-places below extended burials, 190, 201, 343
 Fire-places in mounds, 189, 190, 201, 208, 228,
 232, 237, 319
 Fitzgerald Place, mounds on, 408
 Flint, graceful weapon of, 399
 Flint river, dwelling-site at mouth of, . . 278
 Flints, deposit of rare specimens of, . . 175, 204
 Flints, extensive counterfeiting of, . . . 175
 Florence, mound near, 251
 Form of burial, unusual, 250
 Forms, certain, of aboriginal burial, . . 182, 183
 Foster Place, dwelling-site on, 280
 Fowke, Gerard, 172, 175, 180, 198, 232, 406
Fulgur now termed *Busycon*, 184
- Galena, lead sulphide, coated with lead
 carbonate, the white lead of commerce,
 231, 232, 240, 245, 246, 247, 248, 249, 250,
 254, 256, 273, 276, 290, 291, 293, 296, 297,
 298, 299, 301, 302
 Galena, cube of, 387
 Galena, lead sulphide, in great abundance in
 the Roden mounds, 291
 Galena, rude discoidal of, 299
 Galena, sphere of, 297
 Garland's Ferry, dwelling-sites near, . . . 308
 Garrison Place, mounds on, 406
 Gilchrist Island, dwelling-site on, . . . 253
 Gilchrist Island, dwelling-site on, . . . 258
 Gillespie Landing, mounds near, 396
 Goodwin Place, mounds on, 412
 Gorget of shell, of unusual shape, . . . 348
 Gorget of shell, with design of woodpecker's
 head, etc., 316
- Gorgetts of shell, 261, 267, 281, 295, 306, 315,
 317, 318, 348, 351, 372, 374, 376, 378, 379,
 380, 381, 382, 383, 385, 386, 396
 Gorgetts of shell, mask-like, 372, 380, 381, 384,
 385
 Gorgetts of stone, 243, 420, 421, 422
 Grant Island, dwelling-site on, 420
 Graphite, impure, ornament of, 331
 Graphitic material probably used as paint, 284,
 305
 Graves filled with shells, 280, 281, 320, 359, 391
 Graves of unusual form, 277, 406
 Gray, A. J., Place, mounds on, 190
 Gray, T. J., Place, cemetery on, 190
 Grooved axes seldom found in any of our
 excavations, 421
 Grooved celt, 368
 Grooved hammer of flint, 364
 Group of mounds, principal, on Tennessee
 river, 177
 Guntersville, mound near, 281
- Hale's Bar, dam and lock, 338
 Hammer, grooved, of flint, 364
 Hampton Place, Hamilton county, dwelling-
 site and mounds on, 361
 Hampton Place, lower, mounds on, . . . 407
 Hampton Place, upper, mounds on, . . . 407
 Harrison Ferry, mounds below, 388
 Hematite as pigment, 200, 311, 363, 364, 373,
 387, 391
 Hematite, bar-amulet made from, 318
 Henry Island, mounds on, 286
 Henson Place, mounds on, 189
 Hiwassee Island, mounds and sites on, . . 394
 Hixson Place, mound on, 389
 Hobb's Island, mounds and dwelling-site on, 278
 Hodge, F. W., 184
 "Hoe-shaped" ceremonial axes of stone, 318,
 351, 376
 Hoes wrought from musselshells, 318, 351
 Holmes, Prof. William H., 171, 188, 306, 316,
 351, 372, 374, 379, 380
 Hones, of sandstone, 208, 396
 Hood Place, mound on, 409
 Hood's Ferry, mounds near, 412
 Hope Place, mounds on, 408
 Hopper Place, dwelling-site on, 275
 Hoyal Ferry, mound near, 397
 Hrdlička, Dr. Aleš, 183
 Hubbard Landing, mound near, 234
 Huffine Ferry, mounds near, 414
 Human remains in poor condition along
 Tennessee river, 183
 Hut-rings, 282
- Igou Ferry, mound below, 390
 Implement, interesting, of flint, 373
 Implements of bone, with rounded points, 377
 Inhabitants, early, of Tennessee, . . . 172
 Introduction, 171
 Investigation along Tennessee river, order of, 184
 Investigations, archæological, of Tennessee, 171
- Jackson Ferry, mounds near, 408
 Jackson Place, mound and site on, . . . 421

- Johnson Place, mounds on, 241
 Jones, Dr. Joseph, 171, 172, 173, 174, 188
 Jones Place, mound on, 398
- Keeley, F. J., 184
 Keller, Dr. H. F., 184, 262, 374
 Keyforver Place, mound on, 403
 "Killing" of a drinking-cup, 243
 Kimbrough Place, mounds on, 403
 Knife of iron, 364, 365
 Knives of flint, large, 342, 343, 345, 347, 380, 383
 Knoxville, mound near, 422
 Koger's Island, dwelling-sites on, 241
- Lancehead, of flint, graceful, 270
 Leadbetter Landing, dwelling-site at, 205
 Leaf-shaped implements of flint, 355, 367, 376, 380, 383, 386
 Leatherwood creek, mounds near, 199
 Lenoir City, mound near, 419
 Lenoir City, mounds opposite, 419
 Life-forms in pottery, 190, 207, 222, 223, 260, 266, 269, 283, 347, 349, 351, 381
 Limestone creek, mound near, 272
 Little River shoals, dwelling-site near, 421
 Lock number 3, dwelling-site at, 253
 Long Island, mounds on, 414
 Loomis, F. B., 237
 Looney Island, mound opposite, 422
 London, mound opposite, 418
 Lovelady Landing, mound at, 389
 Lovelady Landing, mound near, 389
 Lucas, Prof. F. A., 184, 237, 376, 377
 Lumholtz, Carl, 420
 Luty Place, mound on, 403
- Manganese ore, mass of, 391
 Map of Tennessee river in Alabama, 235
 Map of Tennessee river in eastern Tennessee, 333
 Map of Tennessee river in Kentucky and western Tennessee, 186
 Map, showing distribution of stone graves along Tennessee, 179
 Map, vicinity, of Tennessee river, 170
 Mat of reeds, 342, 346, 347
 Matting, remains of, 187, 301, 315, 340, 341, 345, 362
 Mason Island, dwelling-site on, 260
 Measurements, character of, 184
 Mica with burials, 299, 330
 Miller, Dr. G. S., Jr., 184
 Miller, Dr. M. G., 184, 224, 338
 Milton Bluff, dwelling-site above, 258
 Minute arrowpoints from near Chattanooga, as to the genuineness of, 356
 Moccasin Bend, minute arrowpoints said to be found at, 356
 Montgomery Place, mounds on, 388
 Montgomery, Prof. Henry, 294
 Moorehead, Prof. Warren K., 246, 356, 357
 Mortars, 311, 321
 Mosso, Angelo, 380
 Mound on Shiloh Battlefield, investigation of, 225
- Mud creek, mounds near mouth of, 396
 Mullers, 275, 392
 Musselshell hoes, 318, 351
 Musselshells and stones above burials, 321, 330
 Musselshells, deposit of, under stones, 280
 Musselshell spoons, 207, 261, 267, 268, 307, 345
 Musselshells perforated for suspension, 375
 Myer, W. E., 172, 174, 175
 McDonald Place, mound on, 399
 McGuire, Joseph D., 375
 McKee Island, dwelling-site on, 281
 McKenzie Place, mounds on, 388
- Nance's Reef, mounds above, 257
 Nash Landing, mound near, 227
 Needle, bone, with eye, 279
 North Carolina Landing, mounds below, 227
 North Carolina Landing, mound near, 228
- Object of claystone, 354
 Object of indurated clay, resembling semi-lunar knife, 188
 Object of wood, copper-coated, 351
 Ochre, red, as pigment, 318
 Old Callens' Landing, mound at, 220
 Old Furnace Landing, mound near, 207
 Ornament of impure graphite, 331
 Ornament of sheet-copper, 298, 347, 384
 Ornament of sheet-copper representing an eagle, 342
 Ornament of copper, perforated disc, 367
 Ornaments of sheet-copper on skulls, 287, 289, 342
 Ornaments of wood overlaid with sheet-copper, 263, 264, 265, 343
 Ornaments of wood, overlaid with sheet-copper, Mr. C. C. Willoughby as to, 263, 343
- Paint Rock creek, mounds near, 415
 Paint Rock Landing, dwelling-site near, 279
 Pathological specimens, 184
 Peabody, R. S., 246
 Pearl of great size, used as bead, 319
 Pearls, baroque, pierced for stringing, 267
 Pearls used as beads, 267, 319, 350, 383
 Pendant, copper-coated, 187
 Pendant of brass, 368
 Pendant of musselshell, 346
 Pendant, wrought from columella of a conch, 238
 Penis bone of raccoon, implement, 351, 374
 Penney Place, dwelling-site on, 280
 Periwinkle Hill, 254
 Perkins Bluff, mounds near, 222
 Perkins Spring, mounds near, 243
 Pickles Place, mound on, 415
 Pickwick Landing, dwelling-site near, 229
 Piercing implements of bone, 204, 210, 227, 270, 279, 281, 286, 305, 323, 324, 343, 345, 356, 389, 397
 Pigment on pottery, unusual, 349
 Pilsbry, Dr. H. A., 184, 293
 Pine Island, mound and dwelling-site on, 302
 Pin-shaped ornament, 267
 Pin-shaped ornaments, remarks on use of, 262

- Pins of bone, 328, 345
 Pipe blocked out of claystone, 387
 Pipe, effigy, remarkable, from mound on Shiloh Battlefield, 226, 227
 Pipes, 226, 227, 239, 260, 281, 286, 324, 343, 351, 364, 365, 366, 367, 371, 374, 377, 378, 381, 383, 384, 386, 393
 Pipes of unusual form, 364, 366, 367
 Pipes showing interesting conventional treatment of the beak of a bird, 374, 375, 384, 386
 Pitted stones, 311, 321, 323, 368
 Pittsburg Ferry, mound near, 222
 Pittsburg Landing, mounds near, 223
 Plan of burials in Mound A, Bennett Place, 339
 Pond creek, mounds near mouth of, 415
 Pottery discs, 190, 234, 355, 377, 380, 387, 400, 408
 Pottery discs with burial, 380
 Pottery, interesting fragment of, at Citico site, 371, 387
 Pottery, new type of ware, marking local culture, 345, 348
 Pottery of Tennessee, 176
 Pottery trowels, 188, 242, 386
 Prater, Edward, Place, mounds on, 419
 Prater Island, dwelling-site on, 421
 Prater, S. E., Place, dwelling-sites on, 420
 Prevatt's Landing, dwelling-site at, 204
 Putnam, Prof. Frederic Ward, 171, 173, 174, 175, 178, 184, 282, 316

 Quartz crystals, 368, 420
 Quartz crystal used in medicine, or magic, 420

 Rattles, 374, 377
 Rattlesnake, conventional design of the, 379, 380
 Rattlesnake design on shell gorgets, 306, 376, 378, 379, 381, 382, 396
 Raybon, J. S., 180
 Reed, M. C., 370
 Red Cloud Ferry, mound near, 408
 Reel-shaped ceremonial ornaments of copper, 245, 246, 247, 277, 278, 291, 292, 295, 296, 299, 300, 301
 Reel-shaped ceremonial ornaments of copper, data as to, 245, 246, 277
 Repoussé decoration on sheet-copper ornament, 289
 Riggles Ferry, dwelling-site near, 337
 Ring of stone, 378
 Riverton, mounds near, 239
 Rivet, Dr. P., 376
 Rockwood Landing, mounds near, 409
 Roden mounds, 290
 Roden mounds, character of, 290
 Rudder Place, mounds on, 318

 Savannah, mounds at, 170, 221
 Seibold Place, dwelling-site on, 285
 Semilunar object of indurated clay, 188
 Sequatchie creek, mound and dwelling-site at mouth of, 335
 Seven Mile Island, mound and dwelling-sites on, 251
 Shawnee in Tennessee, 172
 Shell beads: see beads of shell.
 Shell eup, *Cassis*, 263
 Shell discs, 300, 307, 346, 351, 355
 Shell ear-plugs, 261, 263, 306, 355, 373, 374, 376, 378, 384
 Shell ear-plug, "bracket" shaped, 372, 382, 384
 Shell ear-plugs, spool-shaped, 383
 Shell form in earthenware, 190, 207
 Shell gorgets, 261, 267, 281, 295, 306, 315, 317, 318, 348, 351, 372, 374, 376, 378, 379, 380, 381, 382, 383, 385, 386, 396
 Shellmound, dwelling-sites at, 337
 Shell mounds, 242, 272
 Shell pendant, columella of a conch, 238
 Shiloh Battlefield, group of mounds on, 177, 224
 Silver boss, 308
 Simoens da Silva, Dr. A. C., 414
 Sites investigated, Part I, 185
 Sites investigated, Part II, 233
 Sites investigated, Part III, 332
 Skinner, Alanson, 413
 Skulls, certain, of Algonquin type, 183
 Skulls, description of, to be published later, 183
 Skulls presented to National Museum, 183
 Slaughter Place, mounds on, 276
 Smith, Professor Eugene A., 246
 Snodgrass Place, mounds on, 312
 South Flint river, mound and dwelling-site near, 270
 Spade of stone, of unusual size, 243
 Spearhead of flint, broken ceremonially, 302
 Spearhead of flint, of unusual form, 399
 Spence Place, mounds on, 397
 Sphere of silicious material, 204
 Spool-shaped ear-ornaments of copper, 245, 255, 277, 301
 Spoons carved from musselshells, 261, 267, 268, 307, 345, 348
 Stamp decoration on pottery, 242, 272, 279, 281, 314, 318, 335, 356, 371
 Star Lime Works, cemetery near, 188
 Steatite vessels, 242
 Steel Place, mound on, 270
 Stehlin, Karl, 380
 Stone box-grave discovered by us in Alabama, 289
 Stone box-graves found in groups at one place in eastern Tennessee, 393
 Stone grave in part utilized in making another one, 194, 208, 311
 Stone grave, rudely circular, 406
 Stone graves, 187, 188, 189, 191, 192, 193, 194, 203, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 229, 232, 247, 282, 285, 286, 289, 304, 308, 309, 310, 311, 312, 315, 316, 319, 320, 321, 322, 323, 324, 325, 327, 328, 329, 336, 343, 346, 353, 361, 385, 390, 391, 393, 394, 404, 405, 406, 407, 415
 Stone graves, box variety, 187, 191, 192, 193, 194, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 286, 328, 343, 393, 394
 Stone graves, box variety, detailed description of, 191, 192, 193, 194, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 286, 343, 393, 394
 Stone graves, classification of, 178

- Stone graves, comparatively few on Tennessee river, 177
 Stone graves discovered by us in Alabama, 178
 Stone graves, distribution of, 172
 Stone graves, few artifacts found in them, 174, 178
 Stone graves found with unenclosed graves along Tennessee river, 178
 Stone graves, map showing location of, on Tennessee river, 179
 Stone graves, their form and contents, 173
 Stone graves the most distinctive feature in the archæology of Tennessee, 172
 Stone mounds, 197, 198
 Stone slabs, peculiar arrangement above baked clay layer, 203
 Stones presumably as supports for vessels, 201
 Street, Oliver Day, 172
 Swallow Bluff Island, mounds on, 208
 Swan Pond Landing, mound near, 231
 Swanton, John R., 172
 Swastika, decoration on pottery, 348
 Sycamore Landing, mound near, 257
 Sykes Place, dwelling-site on, 199

 Tedder Place, mounds on, 411
 Teeth of drum-fish used in rattles, 374, 377
 Tennessee, former inhabitants of, 172
 Tennessee river, archæological work on, 176, 177, 178
 Tennessee river, highest mound on, 177
 Tennessee river, its course and character, 176, 177
 Tennessee river, not of great archæological importance, 177
 Thomas, Cyrus, 171, 178, 180, 394
 Thompson Place, dwelling-site on, 199
 Thruston, Gen. Gates P., 171, 172, 174, 175, 180, 188, 191, 232, 242, 245, 374, 379, 380, 404
 Tick Island, mound on, 254
 Tomahawk of iron or of steel, 306
 Tool of elk antler, 337
 Tools, mushroom-shaped, of earthenware, 188, 386
 Tools of stone, with blunt edges, 384, 396, 397
 Traders in aboriginal artifacts abundant on Tennessee river, 177, 181, 229, 397
 Triskele, design on gorgets, 374, 396

 Trowel, pottery, of unusual shape, 242
 Tube of bone, 386
 Turtle shells with burials, 217, 374

 Unenclosed burials apart from stone grave burials, numerous along Tennessee river, 178
 Urn burial, 305

 Vanatta, E. G., 184
 Verneau, Dr. R., 376
 Vessel of pottery covered with carbonate of lime, 262
 Vessels of soapstone, 242
 Vessels, pottery, of novel form, 237, 238, 253, 254, 256, 258, 269
 Vessels with unusual painted decoration, 345, 348
 Vessel with projections to aid suspension, 266
 Viniard Landing, mounds near, 400

 Wardle, H. N., 184
 Wattle and daub structures, burned, 315, 341, 362
 Wattle imprints on burned clay, 203
 Weapon of flint, of unusual shape, 399
 Weaver Place, dwelling-site on, 254
 Weir, S. G., 184
 West Shipp's Landing, mound near, 205
 Wheelock Place, mounds on, 406
 Whelpley, Dr. H. M., 373, 399
 White Place, mound and dwelling-site on, 352
 White's Ferry, dwelling-site at, 278
 Widow's creek, mounds near, 319
 Wigwam sites, 282
 Williams Island, 354
 Williams Island Ferry, mound and dwelling-site at, 360
 Williams Landing, mounds near, 324
 Williamson, Robert W., 420
 Williams Place, mounds on, 221
 Willoughby, Charles C., 184, 263, 294, 343, 399
 Wintenberg, W. J., 294
 Wolf Island, mounds opposite, 221
 Wyman, Jeffries, 171, 380

 Yellow creek, mounds near mouth of, 231
 Young, Col. Bennett H., 356, 357, 358
 Young, D. B., 237

